

Plan Evaluation and Monitoring in Ten U.S. Cities, And an Assay of Land Use and Transportation Integration Indicators

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Abstract

Plan evaluation and monitoring is often determined to be an under-developed step in the planning process. There is an extensive literature on the theory behind effective plan evaluation and monitoring, including the use of indicators. However, there is a need to research more closely how city planners are currently conducting plan evaluation and monitoring ‘on the ground’. This paper’s background consists of a literature review of plan evaluation and monitoring, and the general use of indicators. Methods of examination of current practices include three parts: 1) a review of indicators that examine the integration of land use and transportation, and an examination of the current practices in ten United States cities consisting of 2) a review of procedures and documents related to plan evaluation and monitoring that are evident from city government websites, and 3) a telephone interview with a senior level planner. Results for part 1 include a list of practical indicators for land use and transportation. Part 2 and 3 show a wide variety of practices in plan evaluation and monitoring, and interviews revealed many recommendations to planners as they improve or develop plan monitoring and evaluation programs. Practices range from annual reports, to plan consistency reviews during ordinance updates, to indicator monitoring from a department outside the planning department, and many more. Recommendations include designing plans with the aim of monitoring in mind, and the importance of choosing a few critical things to measure rather than an intensive and comprehensive data analysis approach, and many more. This paper points to the need for further research on the relative effectiveness of various approaches under different circumstances, and further surveys of plan evaluation and monitoring at different scales and different types of cities.

Keywords: plan evaluation, plan monitoring, indicators

Introduction

In a time of extant or looming economic, energy, climate change, water, and housing crises, it makes sense for local governments to focus their resources on planning for sustainable development, and to use the resources available in the computer and information age to design the most effective, efficient, and inspiring plans possible to achieve the most with limited resources (Hoernig & Seasons, 2005). Managing information in order to leverage plans for the betterment of all will be a critical step in moving closer to a world in which the environment is protected and enhanced, places are preserved, people's needs are taken care of, and the economy is thriving.

Although there is a plethora of literature on indicators, there are many challenges to the implementation of a formal system of plan evaluation and monitoring, and literature on the practical application of monitoring systems is meager (Hoernig & Seasons, 2004). Although planning in general would be well-served to strengthen evaluation and monitoring procedures, some individual planning departments have developed various strategies to evaluate the success of their plans and respond to feedback. These procedures are under-researched (Hoernig & Seasons, 2004). Far from having simple standardized procedures, city planning departments have adopted a variety of approaches that they deem effective. This paper investigates current practices in ten U.S. cities through telephone interviews with senior level planners. The results of the interviews are synthesized into a set of recommendations and lessons learned that are useful to other municipalities seeking to develop or improve their monitoring and evaluation methods.

One method that has been studied is the use of indicators to track progress. There are a variety of issues that relate to the choice of proper indicators to measure the state of the community and its progress towards its goals. In addition to the interviews, this paper has a section focusing on further details of the use of indicators. The author completed an assay of indicators that can be used to measure the success of plans to integrate land use and transportation, since this issue is at the forefront of sustainability as a planning goal (Cervero, 2002). The result of the assay is a list of practical

indicators derived from literature and current plans. Research institutions should continue to pursue the best methods of planning and evaluation as revealed by data analysis, and highlighting the best practices in the field today.

This paper begins with a background that delves into the definitions, purposes, and challenges in plan evaluation and monitoring and the use of indicators. Next follows a more thorough description of the methods for the indicators search, evaluation document reviews, and interviews of city planners. The results section gives brief summaries of the findings, while detailed reports and tables are contained in the appendix. Results include highlights of indicators found in the topic area of land use and transportation integration, and summaries of interviews and city backgrounds (documents and practices related to plan evaluation and monitoring). Next, the discussion/recommendations section contains a discussion of the land use and transportation indicators, recommendations derived from the interviews with city planners, and discussion of limitations of this report, and further recommendations for future research.

Background

The primary purpose of plan monitoring¹ and evaluation is to discover successes, accomplishments, and areas needing improvement in order to set the course for future tasks (Seasons, 2005). Plan monitoring and evaluation occurs in many forms, and can be instigated by different procedures in local government and within the community. Ways that monitoring and evaluation occur include periodic plan revision processes, annual reports, tracking of complaints and comments, and

¹ *Plan evaluation* for the purposes of this research project refers to any measurement, study, survey, feedback, or other action that tells planners something meaningful about whether the plans that have been adopted are being implemented, whether or not the plan itself is achieving what it set out to do, and whether outcomes are meeting goals and expectations. Although *plan evaluation* can refer to the analysis that helps communities choose which planning scenario is the best to adopt to reach their goals as an early step in the planning process, this study focuses on the evaluation of plans after their adoption and implementation. *Plan monitoring* is essentially a subset of evaluation, and refers to actions that are ongoing or cyclical, rather than one-time actions. In literature and in practice many of the types of actions that planners conduct could be described as evaluative and monitoring. The two terms complement each other and are used in tandem in this document.

tracking of indicators. Plan evaluation processes help to serve broad planning goals, specific planning functions, and as tools to communicate information about plan progress within the government and with the public. Plan evaluation and monitoring should be an integral part of the planning process, be comprehensive, and involve public participation to increase the success of plans. Naturally, plan quality contributes to the effectiveness of plan evaluation and monitoring systems. Strategies can involve quantitative and qualitative data that serve different roles in evaluation--the choice of outputs and/or indicators to monitor, is an essential part of designing an effective evaluation system. The communication of the results is also a crucial part, raising awareness of issues that may need to be improved. Then, significant and important results should inform decision making that leads to improvements in planning to complete the evaluation cycle. Finally, other barriers to effective plan evaluation that have been discovered in previous studies are examined.

Plan evaluation and monitoring is an important part of the scientific problem solving processes of planning (Friedmann, 1987). Plan evaluation and monitoring systems support the general aims of planning, and should be applied to all aspects of the planning process. The American Planning Association states that the purpose of planning is “to improve the welfare of people and their communities by creating more convenient, equitable, healthful, efficient, and attractive places for present and future generations” (APA, 2009). Plan evaluation should apply to all of the areas of planning including land use, historic preservation, transportation, housing, economic development, environmental and resource protection, public facilities and infrastructure, urban design, small area plans, and so on. In a broader sense, plan evaluation and monitoring can track measures relating to health, quality of life, sustainability, and other gauges of community prosperity and welfare (Phillips, 2005). Many of the decisions related to sustainable development are made on a local level, guided by planning; measuring results will be important to ensure that plans are being implemented for the goals of sustainable development outlined in the UNCED 1992- created Agenda 21, policy actions for sustainable development (Wong, 2006).

Plan evaluation is part of the rational planning process that encapsulates the predominant theory for planning (Berke, Godschalk, Kaiser, & Rodríguez, 2006). Within the planning process, evaluation and monitoring serves to “assess how well the community is implementing plan policies, the degree to which development and land use change is consistent with the plan, and the degree to which objectives are being achieved” (Berke et al., 2006). Ideally, in addition to periodic overhauls of plans, there should be a continual feedback leading to improvements in the plan and the planning process (Brooks, 2002). In fact, the evaluation process itself should be evaluated in order to ensure that it is accurately and effectively monitoring the desired outcomes of elements of the plan in a useful manner (Wong, 2006).

Public participation is a crucial component of planning, and many plan monitoring and evaluation procedures involve feedback from the various stakeholders involved. Recent trends in community indicators often incorporate community participation in the design and choice of the indicators themselves (Phillips & American Planning Association, 2003), (Smolko, Strange, & Venetoulis, 2006). Keeping the lines of communication open can help planners gauge the public’s satisfaction with specific plans and their outcomes, or with broader functions of government that impact quality of life (such as housing, economy, health, schools, etc.).

Qualitative and quantitative measures from the evaluation processes can help planners reduce uncertainty about “the efficiency, effectiveness, and impact of their interventions” (Seasons, 2003). It can measure plan quality, implementation and outcomes. Evaluation as new plans are made can help determine whether or not plans are written effectively. Some monitoring procedures are put in place to ensure that new plans and new developments are consistent with other policies and plans in government, which avoids ambiguity and conflicts, and increases effectiveness of the plans. It is important for planners and others in the community to know whether the actions in the plan are carried out, and to know whether the outcomes of the actions are meeting the expectations set in the plan. Plan

evaluation and monitoring procedures can determine whether these broad planning goals are being met.

Monitoring systems can also serve several specific planning functions, such as issue-based planning and plan revision. Evaluation and monitoring can assist with planning objectives such as measuring the outcome of a specific program or policy, such as poverty, biodiversity, high school dropout rate, or carbon footprint. In addition, many comprehensive and area-wide plans undergo periodic revisions and overhauls. Evaluation and monitoring serve as a starting point for future plans and assist with the plan revision process. Often jurisdictions have state or local mandates for evaluation of plans. For instance, in Florida, municipalities must submit an evaluation and appraisal report (EAR) once every 7 years (Florida, 2008). Measurements for the purposes of evaluation can help municipalities gauge their accomplishments, and highlight areas that need improvement.

The communication and presentation of evaluation and monitoring programs is a crucial component of successful planning, and so it is also an important component of the plan evaluation process. Planners must be able to communicate with the public, stakeholders, other government branches, and political leaders how the plan is working (or not) in order to form a credible response to external and internal critics (Hoernig & Seasons, 2004). The literature has discussed both the importance of communication (Hoernig & Seasons, 2005) and the requirements for successful communication of plan evaluation ((Seasons, 2003) and (Smolko et al., 2006). Effective presentation of reports and indicator results can showcase government responsiveness and improve public relations. Interpretation of results is an important component as well (Seasons, 2005). It is often said that the goal of sustainability indicators is in fact to facilitate a dialogue and collaboration among different stakeholders (Wong, 2006). Communicating measures within government can help inform budget and other policy decisions. More importantly, regular monitoring and evaluation when reinforced internally can be a contributor to a culture of continual self-reflection and improvement within

government (J.B. Culpepper, Planning Director, Chapel Hill, NC, telephone interview, May 22, 2009), and (Hoernig & Seasons, 2004).

In addition, the ‘quality’ of a plan can be a help or a hindrance to an effective monitoring and evaluation program ((Berke, Godschalk, Kaiser, & Rodríguez, 2006)). First of all, plans should specify a system for monitoring and evaluation of the plan itself. A formally written system would have a level of accountability lacking in an informal, unwritten one. Language in plans that is action oriented and contains words with more strength such as ‘require’ rather than ‘encourage’ tend to lead to better outcomes. Plans that contain specific numeric targets that are connected to goals and issues are easier to track and evaluate (Berke et al., 2006). Plans with implementation specified, including time frames, and agencies responsible tend to be easier to enforce (Berke & Godschalk, 2009). The compelling attributes of the vision and goals can help to garner support for plans (Brody, 2003). And of course, the involvement of a public participation process can help add credence to the plan and all of its components. Generally, any of the qualities that make a plan effective also increases effectiveness of the evaluation and monitoring, the quality of the evaluation and monitoring program itself being one of the more influential aspects for this purpose.

To be effective, monitoring and evaluation efforts should be practical, meaningful and lead to improvements in plans when appropriate (Smolko et al., 2006). Seasons states that monitoring systems for sustainability should be timely, integrated, comprehensive, meaningful, and participatory, and they should spur discussion (Seasons, 2005). Results of plan evaluation might show progress, bring attention to deficits, or be neutral. In the end, evaluation and monitoring results are useless if issues brought to light are not then changed to improve plans.

The Use of Indicators

Another challenge is that the results of plan evaluation and monitoring programs are determined by what things are measured (Seasons, 2005). In many cases, such as evaluating the

success of a comprehensive plan and its hundreds of policies for a large city, the parameters to be surveyed or measured may not be obvious (especially if targets and monitoring strategies are not incorporated in the plan). In many cases, indicators can serve as a gauge of the economy, human behavior, the health of the natural environment, or quality of life. They help to shed light on trends in the bigger picture (Alliance for Regional Stewardship, 2005). The definitions for indicators vary, but generally point to the use of specific data analysis as a gauge for understanding a community's baseline, what might need improvement, and to gauge progress towards goals. Indicators differ from simple data collection—they represent another level of analysis. Todd Litman from the Victoria Transportation Policy Institute characterizes different definitions associated with levels of data analysis in Exhibit 1 below (2008).

<i>Baseline (or benchmark)</i>	– existing, projected or reference conditions if change is not implemented.
<i>Goal</i>	– what you ultimately want to achieve.
<i>Objective</i>	– a way to achieve a goal.
<i>Target</i>	– A specified, realistic, measurable objective.
<i>Indicator</i>	– a variable selected and defined to measure progress toward an objective.
<i>Indicator data</i>	– values used in indicators.
<i>Indicator framework</i>	– conceptual structure linking indicators to a theory, purpose or planning process.
<i>Indicator set</i>	– a group of indicators selected to measure comprehensive progress toward goals.
<i>Index</i>	– a group of indicators aggregated into a single value.
<i>Indicator system</i>	– a process for defining indicators, collecting and analyzing data and applying results.
<i>Indicator type</i>	– nature of data used by indicator (qualitative or quantitative, absolute or relative).

Exhibit 1: Key Definitions. (Litman, 2008, Dec. 1). This table identifies several essential terms used in plan evaluation systems.

In contrast to plan evaluation and monitoring systems in general, literature on indicators is plentiful. Guidelines for choosing effective indicators were developed by numerous sources, in the academic literature, and in literature related to indicator tracking in practice. Indicators should measure the three prongs of sustainability, social equity, environment, and economy (Berke et al., 2006). One way to measure equity is to disaggregate data about socioeconomic, community conditions, and ethnicity at a small area level (Berke et al., 2006). Indicator types should be chosen based on the role

that they play within the planning process (Hoernig & Seasons, 2005). Many sources recommend including a process of public participation when developing indicators (Hoernig & Seasons, 2005; Smolko, Strange, & Venetoulis, 2006; Sustainable Seattle, n.d.). Whatever indicators are chosen, it is important to acknowledge their limitations and view them in context (Wong, 2006). As in interpreting statistics, indicators' interpretations should be made with caution. Indicators should be designed with a clear purpose in mind, so that they can be better connected with action (Hoernig & Seasons, 2004).

Mark Seasons of the University of Waterloo, Ontario, Canada succinctly breaks down the dimensions of the use of indicators for plan evaluation and monitoring in his book chapter *Understanding Indicators* (Seasons, 2005). According to his discussion, tracking might occur on the comprehensive plan, policy, or delivery levels. Implementation and effectiveness are the next stages in that chain. Measurements can also be made at the institutional implementation level (*is the policy enacted?*) or at the outcome level (*did it achieve what it was supposed to?*). One's purpose might be to measure the current status to determine if a change is needed, or to track progress towards a goal already set. The timing and scale of the monitoring and evaluation is a key characteristic determining which indicators to choose. Some planning activities are ongoing and can change more quickly, others happen in large blocks of space and time and take a long time to plan, such as highway projects. Adjustments and measurements must be adapted to the parameters being measured. If indicators, targets, indexes, or performance measures are used, the design of the parameters measured is critical. The design of all of the indicators and monitoring systems hinges on the question of what is to be measured, which is informed by the values and goals of the policy or plan (or who is doing the monitoring). The very choice of an indicator or monitoring system and how it is coded reveals the beliefs of the chooser. According to Seasons, these are all critical dimensions of the choice of indicators (2005).

Another important consideration when designing indicators is whether or not results can be compared to other localities, or other nations. Benchmarking allows communities to compare their levels of service, for example, to that of other locations. Since land use planning is local, local indicators may not be meaningful regionally or internationally (Wong, 2006). Indicators can be designed from the top down and consistent, or from the bottom up and more pertinent to community (Hoernig & Seasons, 2004). Yet, efforts to synthesize local indicators in England and Europe have been taking place (Wong, 2006). Perhaps communities can benefit from devising local indicators, but also monitor other more universally understood indicators as well.

Heidi Hoernig and Mark Seasons list the challenges and recommendations in using indicators in plan monitoring, which include: the importance of taking political realities into account, the need to tailor indicator systems to the community or organization, since they work best when integrated into the culture (Hoernig & Seasons, 2004). Indicators must be viewed in context and interpreted with a grain of salt for the proxies they are. They may take a large amount of resources. Comprehensive planning has synergistic effects which are hard to measure, and the integrative indicators can't always capture these things. Indicators themselves must be monitored and evaluated. Finally, Hoernig and Seasons point to the need to research indicators and monitoring systems in municipalities in practice (2004).

Other challenges to the effectiveness of indicators are stated in the literature. Helen Briassoulis, in her review of indicators for sustainable development, cautions, that the indicator's results may be only symptomatic, and not drive solutions to problems, and that indicators aren't useful to an actor unless he/she has some power over its outcome (2001). These points emphasize the need for indicators to be interpreted and communicated appropriately to those with decision-making capability, and their constituents.

Some of the most-cited indicators projects are devised by non-profits and community foundations that operate outside of the sphere of government. Many of these groups have had impacts by bringing light to issues that needed addressing. According to the Community Foundations of Canada's Vital Signs project, attention to Toronto's high-school drop-out rate alerted constituents and local government, and spurred policy changes that resulted in a better outcome (Community Foundations of Canada, 2008). Sustainable Seattle tracks indicators of the natural, built, social, and personal environment in the Seattle region, which are integrated with goals generated by community participation with the goal of raising the education and awareness of the community in order to better inform civic participation (Sustainable Seattle, n.d.). An extensive often-cited quality of life indicators project was developed by the Jacksonville Community Council, Inc. of Jacksonville, Florida (Jacksonville Community Council Inc., 2008). Lastly, Redefining Progress, which defines itself as a public policy think tank, produces a Community Indicators Handbook that aims to assist communities in creating indicators tracking programs. And there are many, many others-- indicators media and resources are found in a vast array organizations outside of local government.

Challenges in plan evaluation and monitoring

Qualitative data that helps to evaluate plans can be difficult to measure, but might reflect the most important aspects of measuring plans. Quality of life indicators projects are beset with the difficulties in quantifying subjective perceptions in rating quality of place (Wong, 2006).

Measuring and monitoring success can be a political and controversial undertaking. Those who are tasked with measuring might be biased and/or influenced by the needs and desires of elected officials (Wong, 2006).

Cultural and practical challenges to successful plan evaluation and monitoring were uncovered in a study in Ontario, Canada by Dr. Mark Seasons (2003). In interviews with Ontario area planners, interviewees identified lack of resources, staff, and time as a key challenge. A need for training and

development of technical capacity of planning departments was also noted. Finally, the presence of political will or leadership greatly influenced whether or not agencies had a culture of evaluation and monitoring in place.

At the same time, some planners in the study questioned the need for a formal evaluation practice. Some planners feel problems and successes are obvious from the feedback they get in through the door or what they see on the ground. This is consistent with Michael Brooks' findings, that an ongoing feedback loop between the community and the planners is often the plan evaluation procedure by default due to limited resources. It is difficult to gather support for measuring systems if the power to affect the things that are measured often lies with broader forces in the economy, nationally or internationally over which planners themselves have limited control (Wong, 2006). As with other evaluation and monitoring efforts, it is difficult to tell whether one is measuring the actual effects of policies within a plan, or if other factors, for instance, oil prices or the economy, are influencing behavior or infrastructure investments. Ultimately in planning the question is whether or not plans impact public policy and how those impacts play out (Hoernig & Seasons, 2005). There are innumerable intervening variables. Some solutions to this problem include using indicators that help to show causality. More research is needed to ascertain the cause and effect relationships between public planning decisions and indicator results (Hoernig & Seasons, 2004).

Land Use and Transportation Integration Indicators Background

The challenges of reducing use of petroleum resources due to projected peaking of supply, issues in foreign affairs, and climate change are just a few of the reasons why planning that integrates land use and transportation is important. On a local scale, the integration of land use and transportation planning is a central part of addressing the challenges of reducing total air pollution from auto travel, addressing congestion problems, and the accompanying quality of life issues (McEldowney, 2003). Health concerns arising from air pollution and lack of opportunity for human-powered transportation

such as walking and cycling also contribute to its importance. Sustainable planning involves sustainable land use and transportation that focuses on the integration of the two fields. Transportation infrastructure can induce development, and land use planning can induce a need for transportation infrastructure, so the best plans will take these effects into account when modeling future scenarios (Berke et al., 2006). Incorporating alternative transportation modes such as bicyclists and pedestrians and transit can maximize the accessibility of destinations (Berke et al., 2006).

Integrating land use and transportation is important, and important to evaluate, for many reasons. According to a conference presentation by Professor Robert Cervero of U.C. Berkeley, linking land use and transportation is akin to smart growth, and studies show that cities who manage growth are more successful economically than those who do not (Cervero, 2002). However, there are some challenges to implementing and measuring it. One is the time scale problem: land use projects are shorter term than transportation projects; however, transportation projects are more attractive politically in the short term than developments. More constituents perceive a gain to themselves by a new road, and development approvals may be controversial. Another challenge according to Cervero is that air quality may actually be better in sprawling areas, since pollution is spread out, even if total pollution due to driving is increased. His solution is to emphasize global pollutants such as greenhouse gases as a justification for smart growth. One last challenge identified in integrating land use and transportation is the differences in jurisdictional control of transportation and land use decision-making authority in various regions. Some transportation decisions are made at the local level but have effects that are regional (Cervero, 2002). In some cases transportation decisions are made by a state department of transportation even within incorporated towns, such as in Chapel Hill where this paper was written. Metropolitan Planning Organizations operate at the regional scale, when many land use decisions are made locally, and transportation decisions are made in collaboration with the state. Jurisdictional and scale problems hamper land use and transportation integration (Berke et al., 2006).

What does transportation/land use integration look like?

Transportation and land use integration involves access to mode choice beyond personal vehicles, compact city form and mixed- use development patterns (McEldowney, 2003). Distance between work, home, and other services should be minimized. Transportation infrastructure decisions are based on bringing access to destinations rather than simply mobility. Pedestrian and bike access and infrastructure are present and attract riders and walkers. It is preferable to utilize a transportation index that goes beyond the classic “Level of Service” rating system that assigns a grade to a stretch of road or an intersection based on vehicle congestion, and instead incorporating all people that move through an intersection whether on bicycle, foot, transit, or personal vehicle (Tumlin, 2005, Feb. 17). Transit-oriented development is one example of a set of planning principles that promotes many of these aspects. According to Cervero, the aim is to minimize induced travel effects of land use and transportation decisions (Cervero, 2002). Another good practice is to ensure transportation projects do not disproportionately pave through poorer districts causing isolation or community dislocation and to minimize any disparities in accessibility of different populations (Berke et al., 2006; Cervero, 2002).

How can indicators measure transportation and land use integration?

Any indicators of land use and transportation integration would illustrate trends, current conditions, or progress towards goals in the areas mentioned above. Specific recommendations refer to the need to include accessibility measures rather than just mobility (Berke et al., 2006). Indicators may measure data related to urban design, environment, health, transportation, and regional to neighborhood -scale land use plans. Indicators are expected to measure the extent of planning outcomes of multimodal transportation, pedestrian and bicycle infrastructure and connectivity, public satisfaction with transportation choices, air-quality related health, commuting time, mixed land uses, transit service and ridership, proximity to vital services, and related issues of equity. The use of indicators specifically to measure the integration of land use and transportation planning is also

supported by the same factors and affected by the same challenges mentioned above that apply to plan evaluation as a whole (see General Plan Evaluation and Monitoring Background).

Clearly, more research is needed to form the basis of a resource for planners in designing their plan evaluation and monitoring systems, and on the role of indicators. This study aims to reveal other guidelines on the use of measurements given by practicing planners. An examination of land use and transportation integration indicators provides further details on one aspect of indicator use in gauging the effectiveness of plans.

Methods

Research methods consist of three parts and two topics.

Topic 1. Indicators in practice and literature:

1. Review of indicators that measure the integration of transportation and land use

Topic 2. General methods of plan evaluation and monitoring in practice:

2. A review of the documents and other literature from several city planning departments pertaining to plan evaluation and monitoring practices
3. Primary research consisting of telephone interviews with several senior-level planners from several city planning departments

Topic 1. Indicators in practice and literature:

First, the author conducted a review of the prevailing literature on indicators, and the integration of transportation and land use (see background). Combining principles from the two assisted in determining which land use and transportation measures would be recommended. An essay was undertaken of measures that related to transportation and land use. The sources of the indicators

included several cities planning departments or department of transportation, and indicator-tracking organizations, and one academic source. Sources included (followed by abbreviation used in tables):

Town of Chapel Hill Planning Department (CH)

Town of Carrboro (CR)

City of Seattle Department of Transportation, and Planning Department (SE)

City of Portland Department of Planning and Sustainability (PO)

City of San Francisco Planning Department (SF)

Georgia Regional Transportation Authority Metropolitan Atlanta Performance Report (GRTA)

Chicago Metropolitan Agency for Planning (CMAP)

Victoria Transportation Policy Institute (VTPI)

Jacksonville Community Council, Inc (JCCI)

European Common Indicators (ECI)

Criterion Planners Consulting Firm (INDEX)

Measuring Sprawl and its Impact (EWING)

An effort was made to find indicators in cities that were being interviewed, and from other sources referenced in literature. The City of Chicago did not appear to have transportation indicators, so indicators utilized by the regional planning agency, Chicago Metropolitan Agency for Planning were examined. Data and calculations that were part of Santa Monica's indicators were not retrievable. Criterion Planners is the source of INDEX community indicators assessment. In addition to the other sources listed above, one academic research source was included: the measures used in *Measuring Sprawl and its Impact* by R. Ewing and Don Chen(2002). Although the researchers applied their measures to evaluate planning impacts from an outsider's vantage point, planners could conceivably use their metrics in gauging the level of transportation and land use integration. Rather than being a comprehensive assessment of all land use/transportation indicators that are in use, this research covers

a selection of sources believed to consist of the going best practices, and a starting point for a more thorough assay.

Topic 2. General methods of plan evaluation and monitoring in practice:

The cities were chosen based on numerous factors. Attempts were made to identify the cities in the United States that had effective, novel, or comprehensive strategies for monitoring and evaluating their plans. The literature on evaluation and monitoring was scanned for references to particular cities' practices. These cities' planning departments were then researched to confirm the use of novel, interesting, informative, or effective planning and evaluation methods. Second, the author identified cities that are lauded in literature for implementing best practices in planning in general, which might point towards effective evaluation and monitoring. These cities included Portland, Seattle, and San Francisco. Chicago was chosen based on recent sustainability planning efforts. Santa Monica, CA and Jacksonville, FL were chosen because of the well-known indicators projects associated with their location. Most of the cities were medium to large, with the exception of Carrboro and Chapel Hill, NC. Chapel Hill was contacted based on recommendations from professors at UNC. Charleston, SC and Carrboro, NC were originally chosen as test cases for the interview questions; their results are included to show their unique perspectives on plan evaluation and monitoring. New York, NY planning department was contacted to obtain information on large city evaluation practices, but they did not respond to telephone calls or emails.

Each city that responded was researched to create a short profile of information relating to the plan monitoring and evaluation activities initiated by that city. The background information helps to complement the narratives presented in the interviews and to provide context. The interviews and the profiles are meant to exist side by side and neither replaces the other.

City background information sought included:

1. Structure of government/departments in charge of planning

2. State and local mandates
3. Projects in progress
4. Comprehensive plan contents related to evaluation and monitoring
5. Other programs related to evaluation and monitoring

All information was gleaned either from the city's website, or from the interview with the planning professional. Attempts were made to capture the main programs occurring in the realm of plan evaluation and monitoring. A brief review of the comprehensive plan was carried out whenever the plan was current to discover whether the plan specified evaluation and monitoring activities. If no information was available on any of the five topics, its heading was not included. Links to the pertinent materials and sources are also contained in the profiles.

The author interviewed a senior planner of the local governments' planning department in ten cities in total. The planning director was contacted in each of the cities, however, in many cases another planner in a senior position was more available and presumably just as informed about the planning evaluation and monitoring practices taking place in the city. The interviewer inquired as to who would be the best person to speak with about plan monitoring and evaluation, and followed through with that planner.

Many effective evaluation and monitoring techniques are found at different governance scales such as at the Metropolitan Planning Organization, region, county, state, or even national level. Evaluation and monitoring of city government performance can be often found outside of the government itself, such as in studies conducted by community foundations, chambers of commerce, or other community-based non-profits. Evaluation and monitoring may take place within different agencies in government, such as through the Mayor's office. This study focuses on the *city* jurisdictional level and on the local city government planning department.

Interviews were conducted by phone (with the exception of Jacksonville, FL, which was written) and were all kept to twenty to thirty minutes long in order to provide some standardization. The interviews were conducted between April and June, 2009, by the author. The questions in Exhibit 2 guided the interview, but did not strictly direct it. When responses indicated that there was more to discover about a particular facet of the interview, open ended questions were used to find out the issues that were truly relevant to that planning department in terms of their evaluation and monitoring experience. The goal was to not only find out what each department was doing, but to fully understand the unique aspects of it, and what made their processes successful, in order to glean advice for planning departments that aim to improve or develop a monitoring and evaluation strategy.

Exhibit 2. Interview questions. Note: questions were used as a guide

1. What areas of your plans to you evaluate, such as land use, environment, transportation, redevelopment, public facilities capacity, etc.?

If so, at what stages in the planning process do you evaluate plans?

a. the plan itself?

b. plan implementation?

c. outcome assessment?

2. What qualitative evaluation techniques do you use? Community surveys?

3. What quantitative techniques do you use? What types of data do you use? What are your sources of data, and what software supports them?

4. Which particular indicators or indexes do you use? Do you assess community livability, transportation accessibility, economic development, etc.?

5. Do you benchmark or compare results to other places', or compare to trends over time?

6. How often do you evaluate your comprehensive plans?

- 7. Do you use outside agencies, such as consultants or non-profits, to aid in your evaluation and monitoring processes, such as to perform studies?**
- 8. How are results of monitoring and evaluation efforts used?**
- 9. What else contributes to successful evaluation of your plans? What, if anything, would contribute to the ideal monitoring/evaluation process?**
- 10. Request: Can you please send us/refer us to any other documents that display information on your monitoring and evaluation procedures? Especially 1) how qualitative data is gathered and analyzed, 2) how quantitative data is calculated, 3) anything else on monitoring and evaluation of plans in general.**

The interview responses were transcribed on word processing software in note format, then immediately after the interview the notes were expanded into full responses. These responses were then simply reorganized and edited for the purpose of presentation in the reports in Appendix 1. The final recommendations (see Discussion/Recommendations) are derived from the interviewees' comments. Some of the ideas were more or less directly stated by planners as professional advice, others are inferred from the interview by the author, with varying degrees of interpretation.

Results

Topic 1. Indicators in practice and literature

A wide variety of indicators were found in planning documents, indicator lists from tracking organizations, and the academic article by Ewing and Chen. Many types of indicators are present, measuring elements of land use and transportation integration as different as residential infill and percent of children traveling to school by car. Some indicators are quite broad, such as 'smart growth practices' (Litman, 2008, Dec. 1), and some are quite specific, such as 'good air quality days per year' (Jacksonville Community Council Inc., 2009). The definition of 'indicator' seems to vary as shown by the different expressions found in documents. Most of the indicators were presented as indicators,

some, were presented as ‘performance measures’, including Seattle and Carrboro. Another observation is that Portland’s plan, although outdated, contained many transit-oriented development recommendations, but few were presented as indicators to be monitored. This is confirmed by the interview with Eric Ingstrom, the Portland planner (Eric Ingstrom, telephone interview, May 6, 2009). INDEX has an incredible array of indicators and indices, by far the most that applied to land use and transportation in the study (Criterion Planners Consulting Firm, 2008, Nov.).

Results are organized into two tables. Table 1 summarizes the more common kinds of indicators and their sources. The Table 2 consists of indicators arranged by topic that were specific unique or interesting examples of meaningful land use and transportation integration measures. The source by source inventory is presented in Appendix 2.

The unique and notable indicators in Table 2 are sorted organically by topic. Topics that emerged include: Transit Service, Mix of Land Uses, Travel Demand Management, Transit Oriented Development, Multimodal Travel, Travel Time, Urban Design, Emissions, Vehicle Ownership, Social Equity, and Actions Completed. Most of these are self explanatory; Actions Completed is essentially plan implementation tracking. Many sources had different ways of quantifying these indicators, such as %, total number, proportion, rate, hours of operation versus spatial service area, miles of bicycle lanes versus off-street trails, and so forth. For full details on variations, see Appendix 2.

Sources ² :	CH	CR	SE	PO	SF	GRTA	CMAP	VTPI	JCCI	ECI	INDEX	Ewing
Parameter measured												
Mode split (SOV vs. others)	x		x	x	x			x	x	x		
Transit service	x	x			x			x			x	
Transit ridership	x	x			x	x			x		x	
Pedestrian facilities	x		x						x		x	
Bicycle facilities	x		x		x				x		x	
Vehicle congestion	x					x	x					
Travel time/ delay	x				x		x	x	x			
Mix of land uses	x	x	x	x							x	x
Population or jobs within short distance of transit		x	x			x			x		x	
Urban design			x		x						x	
Pedestrian, bicycle traffic	x				x							
Air pollution					x		x	x		x	x	
Vehicle miles traveled						x	x	x	x		x	

Table 1. Common Indicators. Summary of the more common indicators found in the sources surveyed.

² CH=Chapel Hill, CR= Carrboro, PO=Portland, SF=San Francisco, GRTA=Georgia Regional Transportation Authority, CMAP=Chicago Metropolitan Agency for Planning, VTPI=Victoria Transportation Policy Institute, JCCI=Jacksonville Community Council Inc., ECI=European Common Indicators, INDEX=Criterion Planners.

Indicator	Source
Transit Oriented Development	
strength of activity centers and downtowns	EWING
% of new dev. in infill locations	EWING
transit adjacency to housing	INDEX
transit proximity to housing	INDEX
residential infill	INDEX
transit adjacency to employment	INDEX
transit proximity to employment	INDEX
employment infill	INDEX
transit orientation index	INDEX
transit oriented residential density	SE, INDEX
transit oriented employment density	SE, INDEX
Pedestrian fac. within 1/4 mi. of transit	CH
Multimodal Travel	
Person throughput	SF
Number of accidents, injuries and fatalities by road corridor involving bicyclers and pedestrians	SF
variety and quality of transport system options available in a community	VTPI
transit connectivity index	JCCI
Pedestrian level of service	JCCI
Bicycle level of service	JCCI
pedestrian accessibilities	INDEX
bicycle network coverage	INDEX
int. and ext. street connectivity	INDEX
accessibility of the street network	EWING
Urban design	
weighted pedestrian env. factor	JCCI
prop. of land use fronting the street	SF
street centerline distance	INDEX
pedestrian setback	INDEX
Emissions	
CO2 emissions per capita	VTPI, ECI, INDEX
good air quality days per year	JCCI
Daily vehicle emissions	GRTA, INDEX
per capita fossil fuels consumption	VTPI
freq. of air pollution stand. violations	VTPI

Indicator	Source
Transit service	
corridors with transit travels times above 30% of posted arterial speed limit.	SE
transit access	SE
Mix of Land Uses	
services found within a 20-minute walk	PO
# job opps and commercial services within 30-min travel distance of res.	VTPI
average number of basic services (schools, shops and gov't offices within walking distance of homes	VTPI
land use balance	INDEX
land use mix	INDEX
jobs to housing balance	INDEX
Travel Demand Management	
ratio of vehicles to employees	SF
total number of vanpools operating in a given year in the 28-county Atlanta	GRTA
portion of road and parking costs borne directly by users	VTPI
mobility management programs	VTPI
pricing--congestion, tax reforms, parking cash-out	VTPI
% occupied parking spaces	CH
parking in areas accessible by transit	SF
changes in downtown parking supply	SF
vehicle occupancy during peak hours	SF
parking lot size	INDEX
parking requirements	INDEX
Travel Time	
Planning Time Index- ratio of the total time needed to ensure 95% on-time arrival to free-flow travel time	CMAQ
people reporting commuting times of 25 min or less	JCCI

Indicator	Source
Vehicle ownership rates	JCCI
Social Equity	
Number and/or % of jobs located near affordable housing	JCCI
Actions completed	
percent of rail stations or major bus/bus rapid transit corridors covered by an adopted TOD Station Area Plan	JCCI
% of regional trails plan complete	JCCI
% of urban bike/ped trails complete	SE
comprehensiveness of planning process: considering sign. impacts and best current eval. practices	VTPI
smart growth practices	VTPI
Number of action on high priority transportation neighborhood plan recommendations	PO
Complete Bike master plan	PO
Complete Pedestrian master plan	PO
transit preferential streets/ transit centers	SF
Children's travel to school	
Communities with Safe Routes to School Programs or plans	JCCI
% of children going to school by car	ECI

Table 2. Unique Variations and Other Categories of Land Use and Transportation Indicators.

Topic 2. General methods of plan evaluation and monitoring in practice

This section contains a summary of the types of plan evaluation and monitoring found, and brief overview of each city including backgrounds and interview results.

Nearly every location examined conducted the following types of plan evaluation and monitoring, some of which overlap with each other:

- Comprehensive plan update or full review process
- Monitoring or evaluation of the performance of a particular element in the comprehensive plan, i.e. transportation, parks, etc.
- Monitoring of data on general topics such as housing, population, economy
- Public meetings
- Online or paper-based surveys
- Informal or formal monitoring and responses to public comments such as phone calls, letters, emails
- Feedback from other stakeholder groups
- Response to request from the Mayor, City Council, or Planning Commission, or Dept. Director

Other more nuanced types of plan evaluation and monitoring were more sporadically utilized. Some jurisdictions employed different platforms for plan evaluation and monitoring, or targeted specific areas, or were shaped by various policies. The following list contains examples of other platforms for evaluation and monitoring:

- Monitoring of targets, indicators presented in plan
- Periodic report (i.e. annual, semi-annual)
- Issue-based reports
- Imbedded within the development review process (plan consistency, public hearings etc.)
- Development permit tracking
- Project implementation tracking
- GIS information by lot online, allowing citizen monitoring

- Community Board or neighborhood council feedback

Some other examples of evaluation and monitoring that targeted specific areas of services include:

- Land supply monitoring and capacity analysis
- Annual neighborhood survey
- Neighborhood plan implementation assessment
- Monitoring urban design guideline implementation and outcomes
- Monitoring infrastructure capacity in relation to development

Some jurisdictions plan evaluation and monitoring programs contained these elements and their methods were shaped by these policies:

- Benchmarking with other cities, state, national
- Researching plan monitoring and evaluation in other organizations or localities
- State mandates for plan evaluation and monitoring
- Use of reports conducted by outside agencies
- Evaluation and monitoring by local government agency other than the planning department
- Evaluation and monitoring employed as part of annual budget report

Highlights of city results by location:

Austin, Texas

Background

According to the *Austin Tomorrow* plan, beginning in 1978, in even-numbered years, interim reports are required to be prepared by city agencies for review by the Planning Commission and the comprehensive planning citizen's board. The reports cover quantitative indicators and how they are derived. In odd years, the planning department is charged with creating a report on plan implementation, including qualitative and quantitative measures, outcome assessment, and economic and land use impact of the comprehensive plan. The comprehensive plan and growth management

system is due for revision and re-evaluation every 6 years, with two years lead up time for assessment of goals (City of Austin, n.d.).

Interview

One and a half years ago a specific position was created to monitor and coordinate implementation of neighborhood plans. Neighborhood Contact Teams serve as neighborhood organizers and liaisons with the planning department, providing leadership and feedback on the state of their neighborhoods and the plans.

Her position was essentially funded and created as a result of neighborhood residents' advocacy for implementation of their plans. Right now she is assessing which objectives have been implemented, assessing project feasibility, prioritizing what remains to be done, and then streamlining various actions to improve the implementation of neighborhood plans both in the short term and the long term (Melissa Laursen, telephone interview, May 4, 2009).

Carrboro, North Carolina

Background

The annual Budget Report contains performance measures, mostly relating to how many projects approved, number of staff, financial measures, etc. Other monitoring and evaluation reports include: Downtown Carrboro Market Analysis, and the Carrboro 2005 Mobility Report Card (Town of Carrboro, n.d.).

Interview

Carrboro evaluates each new ordinance update for consistency with other plans and ordinances. They have numerous and active citizen advisory boards who participate in project and plan creation. They monitor the progress of each project and prioritize a list of ten to present to the county board at the annual budget meeting. For building permits and inspections evaluation, they utilize the Institute of Government's (A UNC School of Government initiative) program to measure performance in certain

areas to benchmark with other cities to improve service, effectiveness, efficiency (Roy Williford, telephone interview, April 13, 2009).

Chapel Hill, North Carolina

Background

The comprehensive plan states that the Growth Management Report and Data Book will be produced annually to track progress of the plan. In addition they periodically produce the Chapel Hill Mobility Report Card. The Town Planning Retreat establishes the strategic plan which contains the Council's goals for 2009-10 and prioritizes the allocation of resources (Town of Chapel Hill, n.d.).

Interview

There is an outstanding process in place to monitor the plan progress, although it hasn't been completed every year. There are three interrelated elements 1) annual growth management report 2) periodic plan evaluation/revision 3) tracking community indicators. They started out completing these three steps, but time allocated to the monitoring tasks has gradually dropped off as their attention has been directed elsewhere.

For the Sustainability Visioning Task Force the Town has hired representatives from the UNC School of Government to reach out into the community to gather ideas through forums and surveys, and a new 'visioning wall' (a forum for people to post their ideas which is on display at the local mall and library). As they monitor local trends they are interested in how the town compares to state and national averages. In general they find similar trends as are evident at all levels such as aging population, reduction of physical activity, and so on (J.B. Culpepper, telephone interview, May 22, 2009).

Charleston, South Carolina

Background

The recently revised Century V City Plan calls for several studies to evaluate alternative transportation, and neighborhood development section contains several recommendations but the only measurable objectives involve park size and proximity to residents (pp. 30-31).

The *Documents* webpage lists demographic monitoring such as housing, economy, and population. *City of Charleston Fast Facts* is published annually, containing land area, annexation, demographics, and building permits issued. The department provides support to neighborhood associations in the form of a 'How To' manual.

Interview

They've chosen to do more upfront analysis rather than ongoing monitoring. Many of their recently-adopted area plans involve finer-scaled assessments of neighborhoods. Area- wide plans include some targets. For example, John's Island has a goal of 30% of affordable housing. Some community groups, such as the Coastal Conservation League, and the Historic Foundation, lend their expertise and input on issues such as sustainability and the environment within the planning process. They look to other communities for ideas on how to encourage residential infill, redevelopment, or accommodating growth, for example.

Skilled staff and a mayor supportive of planning, in combination with rigorous community feedback has made their department successful. They continuously evaluate their planning from a theoretical standpoint to be consistent with recommendations from the plan. These qualities and processes make a formal evaluation unnecessary (Christopher Morgan, telephone interview, April 3, 2009).

Chicago, Illinois

Background

The larger Chicago metropolitan area spans sixty counties and three states. The interview covers planning only in the city of Chicago itself.

The city of Chicago is exempt from the state comprehensive plan mandate due to its large size. Due to this, the last complete comprehensive plan was created in the mid 1960s.

The Mayor has a separate environmental agenda with its own monitoring mechanisms(City of Chicago, n.d.).

Interview

They don't have a formal institutionalized evaluation process; they do evaluate old plans when designing new ones, such as revising projections for growth. Public meetings, surveys, formation of steering committees, and other mechanisms for feedback are used when devising plans. Neighborhood Aldermen represent the neighborhoods to the planning commission. Steering committees can consist of representatives from transportation, industrial council, neighborhood groups, and so forth, depending on who's affected by the plans. It's important to try to think about who is not represented in a community meeting. Another aspect that can shape stakeholder's feedback at community meetings is whether or not there is a particular large development project involved. When survey data is collected, the question is how to take the data and use it correctly. They believe in data-driven planning decision-making with careful interpretation of results. Plans will be successful and viable if there is consensus and understanding of opposing viewpoints upfront.

They were involved in some of the green urban design target-setting in Chicago. It is a challenge to retroactively apply green city principles to an already built city. Some of the specific target numbers were somewhat idealistic. Coordination between multiple agencies is a key part of implementing the green design plans (Bennett Howler, telephone interview, June 8, 2009).

Jacksonville, Florida

Background

Florida State requires comprehensive plans and periodic evaluations. The Evaluation and Appraisal Report (EAR) is required to be completed before the old plans are updated.

The City of Jacksonville has begun a year long planning study to develop a Vision for three of their planning districts. The city has created an online discussion group and an email distribution list to solicit input from the community.

Other documents include *Annual Statistical Package*, containing statistics on population, real estate, and the economy (City of Jacksonville, n.d.b). There is a separate indicator monitoring program involving city of Jacksonville government, entitled the “Blueprint for Prosperity ” (City of Jacksonville, n.d.a).

Interview

However, the plan is always subject to evaluation and amendment. For example, the plan can be revised and amended, up to two times per year, as issues arise with provisions within the plan or as new and innovative planning practices require amendments to the plan to facilitate implementation.

The adopted September 2007 Evaluation and Appraisal Report (EAR) introduction describes the evaluation techniques, public participation and other data analysis. The report requirements are quite specific, including assessing implementation, analysis of community data such as census and developable land, identifying issues and challenges, financing of objectives, interagency coordination, coastal hazard plan assessment, etc. (William Killingsworth, email interview, May 30, 2009).

Portland, Oregon

Background

The State of Oregon requires each city and county to adopt a comprehensive plan, with zoning and ordinances to implement it. Currently, the city is revising the Portland Plan, and gathering public

input etc. Documents related to comprehensive plan revision include: Comprehensive Plan Assessment document(City of Portland Bureau of Planning, 2008), and Portland plan fact sheet(City of Portland, n.d.).

Their Economic Development webpage lists several in-depth studies and reports including industrial land supply, Urban Growth Functional Compliance Report, and Vacant Land Inventory Methodology Report. The City Auditor's office conducts an annual neighborhood survey. The Regulatory Improvement Program seeks to conduct one in-depth study in response to feedback annually (Eric Ingstrom, telephone interview, May 6, 2009). Issue reports such as the River Report are conducted on an as-needed basis.

Interview

Currently, during revision of the Portland comprehensive plan, they are trying to integrate performance measures into the plan. One of the important measurable components of the new Portland plan (currently being devised) is to link it with the new climate action plan— including carbon footprint goals. Most plans are structured to contain specified actions to meet plan objectives. Periodically they produce a scorecard on plan implementation, including % of actions complete.

The auditor's office conducts a general city-wide audit each year. It is basically a report on satisfaction with urban neighborhood planning, using a survey method. For the planners, it helps to highlight which parts of the city that plans are working well in, and which need attention. Some staff has the task to keep a database of complaints about comprehensive plan and zoning codes. They prioritize a complaint topic to write a monitoring report about annually.

Another data point that they measure and monitor is mode split of travel in city.

For specific programs they will conduct a 'state of' report, such as the "state of the river" report. This was about monitoring a plan and the health of the river. It contained a mix of qualitative and quantitative measures, such as water quality, recreational use, and lists of accomplishments.

The list of things to monitor and the amount of data that they have access to is more than the planners themselves can do anything about, so the management must decide what measures they want to focus resources on. Some of their evaluation and monitoring activities serve a purpose of community awareness and education, affecting the attitude of the community towards the issues. They often focus more on forging partnerships with other entities. Another successful tactic is to involve the people who are working in the area that they are monitoring (Eric Ingstrom, telephone interview, May 6, 2009).

San Francisco, California

Background

The City of San Francisco Administrative Code requires that the city complete an annual report and a five-year report. The Downtown Monitoring Report evaluates actual statistics economy and commerce downtown to projected ones in the previous plan from 1985. It also evaluates some of the implementation of the design guidelines, analyzing form and functions in some of the taller buildings as compared to the goals set out in plans.

State law mandates that every California City and county adopt "a comprehensive, long-term general plan." Overall the General Plan contains policy goals rather than specific targets or actions. The Transportation Element contains many progressive goals, and a clear transit/ alternative transportation focus. According to plans, transportation performance measures should reflect accessibility, movement of people and goods, not just cars. There are a variety of multimodal indices that go beyond traditional 'Level Of Service' or 'Vehicle-Miles of Travel', including Modal Split, Person Throughput, and Accessibility (proximity of people to activities).

A housing inventory and a commerce and industry inventory are completed annually.

Several reports, in-depth analysis and periodic evaluations are available online, including the General Plan, Issue Papers, Citywide Action Plan and Better Neighborhoods Programs (see Appendix 1 for website locations of documents).

Interview

Every neighborhood plan has own unique political dynamics, and might carry different issues to monitor. Some of these are captured in time series assessments, others are explored in further studies. For example, renter versus owner parking is an issue that they might evaluate in a specific community in more depth.

So far, their strategies are working successfully, although they are always re-evaluating according to results of neighborhood assessments etc. One main successful strategy is that they do not have a formulaic response to planning questions—flexibility is important to respond the most effectively in each situation.

Some more unique methods highlighted in the interview include:

1. Time Series reports are conducted for small area plans two years after a plan is adopted, and every 5 years thereafter.
2. Community advisory committees represent every neighborhood and are charged with tasks related to implementation and monitoring.
3. They also write an annual report to the board of supervisors assessing whether infrastructure is in fact up to standards in regards to development.
4. The Pipeline Report is published quarterly, which enumerates the development proposals throughout city and where each stands in the review and construction process (Kearstin Dischinger, telephone interview, June 2, 2009)

Santa Monica, California

Background

The City Planning Division within the Planning and Community Development Department oversees development review functions. The office of Sustainability and the Environment is charged with reporting on the city sustainability indicators, among other responsibilities. Many indicators deal with planning issues (City of Santa Monica Mayor's Office, n.d.; City of Santa Monica, n.d.).

Indicator reports are produced annually.

Interview

1. Amanda Schachter, City Planning Manager, Planning and Community Development Department

Monitoring and evaluation happens through plan conformity through the permitting process.

One type of permit review process involves a negotiated agreement, in which the developers are required to provide a specific public benefit with the developer. Usually it involves fees or requirements for traffic mitigation, parks and open space, affordable housing, or even child care. Then they monitor compliance with the required public benefits.

They always review other plans for guidance when drawing up new plans. They often find others look to them for ideas, but they do review what other jurisdictions are doing.

From development permit process end it can be very staff intensive to ensure compliance with all of the standards, codes, ordinances, quality of life, and various plans, etc. The ideal is that the plans include conditions of approval that are easily enforced. Design plans with an eye for a smooth development permit approval process—specific, clear, and realistic guidelines are helpful to all of the parties involved in the approval process, including the community.

2. Shannon Parry, Sustainable City Program Manager, Office of Sustainability and the Environment

The Office of Sustainability works closely with all the departments in the city. They work with the planning department to see if sustainability goals are incorporated into the general plan updates.

The sustainability indicators were developed with community input, and have evolved over time. Now there are eight goals areas, including resource conservation, environmental and public health, transportation, economic development, open space and land use, housing, community education and civic participation, and human dignity. There are 80-120 indicators that make up the grades for the eight areas. They have two ways of reporting results: a web-based tool, the “Progress Report,” and a summary document, the “Report Card.” These are produced annually, but in the future they are looking to have them produced every other year, so that there is more opportunity for communication and policy work in the process.

Seattle, Washington

Background

Seattle’s Comprehensive Plan is amended every year. Most of the plan does not appear to contain specifics on implementation or evaluation and monitoring, nor specific target numbers. Exceptions were climate change and transportation (City of Seattle, n.d.; Seattle Department of Transportation, 2005, Oct. 21).

Some monitoring and evaluation reports include:

- *2003: Monitoring Our Progress: Seattle’s Comprehensive Plan*
- *Urban Village Case Studies reports*
- Urban Village Transit Network Monitoring Project

- *Seattle Growth Report*

(City of Seattle Planning Department, 1998; City of Seattle, n.d.). See Appendix 1 for full URLs.

Interview

State law requires them to evaluate their comprehensive plan every 7 years. This review focuses on compliance with state law, including consistency with regional plans. The city's comprehensive plan revision takes 2 years to complete. It involves an extensive public participation process, which asks, among other things, 'are the plan's goals achieving what we want?' The city used to do survey research but it ended a few years ago due to budget constraints.

The comprehensive plan is largely about managing growth, so it has targets for housing and job growth. The goal is to track and channel the nature of growth and how sustainable it is. For instance, growth in jobs and wages can determine if people are able to afford to live closer to downtown or if they need to live further from the city. They serve the purpose of indicators. They monitor households by tracking building permits. They also monitor the economy through the regional council which enables them to track the numbers on an ongoing basis.

In addition they evaluate transit accessibility, even though transit is administered by a regional agency--so they do not have much control over the outcomes. Other departments have specific parameters that they follow. Parks for example, looks at amount of open space per population per geographic area.

After the comprehensive plan was adopted in 1994, the city adopted a monitoring program --it sort of languished after ten years or so. Some of the data was hard to collect, and there was not a strong sense from elected officials that it was actionable or useful to them. Indicators that were important to some officials at one point became less relevant over time.

They have worked with Sustainable Seattle and paid attention to their reports—but their scope does not match up perfectly. Their data is not always relevant for the city. Seattle’s planners have looked at other benchmark programs in the country as part of their research into plan monitoring strategies (Tom Hauger, telephone interview, May 4, 2009).

Discussion and Recommendations

1. Indicator discussion and recommendations:

There are many potential limitations of the indicators assay. It is possible that some indicators may not have been readily available or presented in accessible documents, or interviewees were not privy to them. Some indicators might be monitored within other departments and were not captured here. It seems likely that most cities monitor data related to traffic congestion, transit ridership and service, and other aspects of the built environment. It seems likely that many more ‘Actions Completed’ are tracked elsewhere in government. It may not be presented in plans themselves. Perhaps these parameters are found in internal documents or other forms rather than indicators.

The indicators assay revealed some potential improvements. For example, Carrboro measured numbers of new residential and commercial units approved, which measures volume. This could be improved by comparing this to a second parameter, such as new units approved near transit as opposed to further away. Also, Victoria Transportation Policy Institute contained some ‘indicators’ whose methods of measurement were not obvious, such as ‘mobility management programs’ and ‘smart growth practices’. However, most of their other measures were unique and potentially helpful as evaluative tools.

There are many factors that influence the indicators that a municipality may choose. Availability of data is an important factor, especially in times of shrinking budgets. One of the most

simple and easily obtained indicators is mode split to work, which is available on the census. Mode split is also suggested by literature. Other easily available indicators include number of pedestrian/bike facilities completed, transit ridership, commute time to work, and number of good air quality days. Other indicators may require deeper levels of analysis and greater staff and software capacity.

Another consideration is how to score the vehicle congestion measures. On the one hand, high rates of congestion can use up hours of time that could be spent in more productive endeavors, in addition to increasing emissions and financial costs of transportation. At the same time, road congestion can make transit, bicycling, or walking become more attractive, and in a larger city, some congestion is unavoidable. Some communities, such as Chapel Hill, prefer to set a standard for roads at a somewhat congested level, in order to balance the need to fully utilize road capacity and increase the competitiveness of other modes of travel.

There are several indicators suggested by literature that were under-represented in the essay. These include:

1. Measures of transportation disaggregated by socioeconomic status, income, and ethnicity.

The only measure of equity found that integrated land use and transportation was ‘number and/or % of jobs located near affordable housing, by JCCI. Questions should be asked of new projects and planning: what are the impacts of land use and transportation decisions on these groups? Are the positive and negative impacts equitable? Perhaps more data on affordable housing near transit and jobs for all income brackets near transit would be helpful for forming plans and measuring them.

2. Analysis of the tax base near transit. This could be an excellent ‘diagnostic indicator’ (Cobb & Rixford, 2005), comparing tax value of land near transit, and further away, or comparing before and after a transit stop is installed.

3. Vehicle ownership rates. This may be a good indicator of the effectiveness of transit.

In some cases, it seems that more indicators does not necessarily mean better monitoring or better planning is occurring and vice versa. For example, Chapel Hill and Seattle's plans direct the monitoring of many detailed indicators, and yet in the interviews, their planning departments have not continued to produce the indicator reports for various reasons (see Plan Evaluation and Monitoring Discussion/Recommendations). In another case, Charleston, SC had very few indicators, claiming that with strong leadership and department expertise obviated the need for extensive evaluation.

Clearly there is a wide variation in approaches to transportation and land use indicators. Many different measures are available to planners. Some indicators might make more sense for one area than another according to different conditions and circumstances. Future research can explore the types of indicators that work in jurisdictions with different characteristics. It would also be interesting to explore the different ways of communicating results to the public, local government agencies, and other stakeholders, and methods of comparing results across jurisdictions.

2. Plan evaluation and monitoring in practice discussion and recommendations:

I. City profiles in plan evaluation and monitoring

As shown in the analysis (see Appendix 1), there is a huge variety to the forms and structures of plan evaluation and monitoring exhibited by the ten cities studied. Some practices were nearly ubiquitous, while others were unique to a particular city. Some cities evaluate their comprehensive plans every 6 years, such as Austin, but others do not have current comprehensive plans, such as Chicago. Some cities have not been able to thoroughly follow through planning and evaluation programs, such as Seattle and Chapel Hill. Evaluation is conducted on a variety of areas including neighborhood planning, economic development, building permitting, and transportation. Evaluations are coined 'Annual Reports,' 'Report Cards,' 'Surveys,' 'Fast Facts,' 'Annual Statistical Report,' and 'Comprehensive Plan Assessment.' In some cases, evaluation was conducted by agencies outside of

the planning department, such as those involved with Chicago's Mayor's sustainability initiatives. As might be expected, larger cities tended to have more elaborate evaluation procedures in place, such as San Francisco and Seattle. However, most places did not seem to have specific measureable targets and indicators embedded in their plans, which is recommended by plan quality literature.

The organizational structures for planning departments had slight variations. In most cases, zoning, inspections, and planning were contained in one department. Some places also included economic development or neighborhoods in the same department. Portland recently merged the department of Planning with the department of Sustainability. Also, the cities located in California, Oregon, Washington and Florida have state mandates to develop comprehensive plans. It might be revealing to study further the affects that organizational structure and state mandates have on the effectiveness of the planning department.

Due to the fact that this assessment was conducted mainly online and with the input of one contact in the planning department, certainly some documents and processes could have been missed. It is likely that data tracked within other departments, such as economic development, public services, and so forth that were not captured within this study. A more in-depth look at particular cities could enhance the institutional knowledge of how plan evaluation and monitoring is set up in various cities and the factors that influence its effectiveness.

II. Recommendations inferred from interviews with planners on plan evaluation and monitoring

Plan evaluation and monitoring in general—structural recommendations

- Plan consistency is a key part of monitoring (CARRBORO)
- Some monitoring and evaluation techniques may include: monitoring indicators, compiling statistical data, and reporting on growth management (CHAPEL HILL)
- When devising new plans, compare old forecasting data to outcomes as one assessment of the plan-making process (CHICAGO)

- Consider using a ‘time series’ approach to neighborhood plan evaluation which analyzes plan progress over time (SAN FRANCISCO)
- When choosing monitoring strategy, think through which issues to measure that will have longevity so that results will be worthwhile in 10 or 20 years. (SEATTLE)
- Have a formal system, but not too detailed or specific to current politics, so that it is doable and relevant. More timely detailed studies can be performed in response to issues that arise. (SEATTLE)

Plan evaluation and monitoring in general-- keys to success

- Success of monitoring and evaluation programs depends on the leaderships’ prioritization of them (CHAPEL HILL)
- The State of Florida is one model of a very thorough planning structure, including in-depth data analysis and forecasting, periodic plan quality evaluation, and monitoring of implementation (JACKSONVILLE)
- Involve people in the front line of implementation in monitoring efforts (PORTLAND)
- Thoughtfully prioritize what to measure and what areas to evaluate and monitor in depth (PORTLAND)
- Consider reports and evaluations as tools to affect change within the community and government beyond the planning department (PORTLAND)
- Evaluating sustainability involves every department in government and every sector of the community. It is important to be able to effectively work across departmental lines to accomplish goals. (SANTA MONICA)

Specific plan design recommendations for successful monitoring and evaluation

- Comprehensive plans and their monitoring and evaluation components can be thought of as dynamic documents that are a part of what guides the actions of departments in government (CHAPEL HILL)
- One way to assist in monitoring efforts is to integrate measurable goals into the comprehensive plan. (PORTLAND)
- Design plans with an eye for a smooth development permit approval process—specific, clear, and realistic guidelines are helpful to all of the parties involved in the approval process, including the community. (SANTA MONICA)

- When setting targets, such as in a sustainability plan, it is important to also set out the realistic methods to get to those targets (CHICAGO)
- Consider having a somewhat flexible timeline for updating elements of the comprehensive plan rather than updating all of them at the same time (SAN FRANCISCO)
- Consider monitoring during the plan-writing process so that the plan is shaped for monitoring. (SEATTLE)

Data analysis

- It is important to support neighborhood-based planning groups with data about their constituencies to inform their decision-making (CHICAGO)
- Statistical evidence behind planning issues can be misinterpreted—one of planner's roles can be to dispel misconceptions based on the inaccurate use of data (CHICAGO)
- Scale is an important factor: the scale of analysis determines the factors to be monitored. (PORTLAND)
- In-depth data analysis should balance staff capacity for data gathering with staff capacity for program development, policy work, and communication of that data. (SANTA MONICA)
- It is more important, relevant, and effective to put effort into the choice of a smaller number of indicators to monitor that will be timeless, than to expend resources on a large number of data analysis triggered by changeable current trends (SEATTLE)

Software tools (see also Role of public participation)

- Project-tracking software can assist in keeping development applications on-time (CARRBORO)
- Consider using a web-based presentation as well as portable document format and hard copies to communicate community evaluation results. (SANTA MONICA)

Neighborhood plan evaluation and monitoring

- Neighborhood plan advisory teams can be an integral part of creating, evaluating and implementing neighborhood plans (AUSTIN)
- A neighborhood plan implementation liaison can be instrumental in making plans happen, and in making better neighborhood plans (AUSTIN)
- Town hall meetings may be a critical forum for evaluating the success of local plans (AUSTIN)

- Seek information about satisfaction at the neighborhood level (PORTLAND)
- Each neighborhood may carry different policy challenges that may require different evaluation and monitoring responses (SAN FRANCISCO)

Issue-based and project-based plan evaluation and monitoring

- Consider forming a steering committee for large new projects on a case-by-case basis, including representatives from major groups involved and affected by the project (CHICAGO)
- Outside of the mandated evaluation procedures, plans may need to be adjusted according to issues and innovations that arise, reflecting current practices (JACKSONVILLE)
- Be flexible in responses to planning questions to best tailor data gathering and analysis to the situation (SAN FRANCISCO)
- Consider evaluating coordination of infrastructure and development (SAN FRANCISCO)
- An annual report such as a housing, commerce, and industry inventory may be an effective way to gain a snapshot of local statistics of the state of the community (perhaps without the extra burden of large amounts of indicators) (SAN FRANCISCO)

Role of public participation

- Gathering community feedback for evaluating plans for the future can be accomplished through forums, surveys, and utilizing new communication tools such as the participatory ‘Visioning Wall’ on display at the local library, and Facebook (CHAPEL HILL)
- It is important to be in touch with the responses of the community (CHARLESTON)
- Consensus building upfront within the community can lead to more successful plans, with better evaluations down the road (CHICAGO)
- Qualitative data gathered from the community through forums and surveys should be interpreted carefully depending on whether the group is a representative sample of the wider constituency (CHICAGO)
- An active community, participating on numerous community advisory boards, can extend the efforts of the planning department (including using their evaluation feedback) (CARRBORO)
- Community advisory committees can be an effective way to perform some planning functions such as infrastructure prioritization, enforcement, and monitoring. (SAN FRANCISCO)

Role of outside agencies in evaluation and monitoring

- Use community groups’ expertise and input to improve the plan (CHARLESTON)

- Look to other communities for ideas for implementing goals (CHARLESTON)
- State requirements vary significantly and can greatly influence the degree and type of plan evaluation and monitoring that occurs (JACKSONVILLE)
- Use results of other organizations, ex. Sustainable Seattle, Vancouver's Vital Signs, etc. to help track progress and indicate areas of improvement (SEATTLE)
- Community indicator groups, such as Sustainable Seattle, might assist municipalities and have more impact if they monitor/evaluate along municipal jurisdictional lines, so that their data is applicable at the city, county etc. level. (SEATTLE)

Planning in general

- Forging good relationships among city departments is important in accomplishing planning tasks (AUSTIN)
- Although plan-making may be initiated by the neighborhoods, it is important to have staff dedicated to assisting in the process, ensuring that plans are feasible and consistent with government policies and ordinances (AUSTIN)
- Planners can also train and assist neighborhood groups in implementing and coordinating smaller projects and applying for grants (AUSTIN)
- Consider creative efforts to reach goals of plans by creating partnerships with other departments within government (PORTLAND)
- Upfront analysis of neighborhoods is key to successful planning (CHARLESTON)

Conclusion

It is important to note that due to the time constraints of busy professionals, this study may not have captured every aspect of the experiences of the various cities. However, within these limitations, this is an accurate snapshot, if not utterly comprehensive, of the happenings in the realm of plan evaluation and monitoring in the ten cities. In order to have multiple viewpoints and to corroborate findings, other parties within the planning agencies should be interviewed as well.

Areas for future research on this topic include the following:

- Random sample of cities of different sizes and locations
- Study focusing on metropolitan regions, counties, and states scales of plan evaluation and monitoring
- Assessment of the teaching of the best practices for evaluating and monitoring plans—there is a distinct lack of actual methods for evaluating the impact and effectiveness of plans, even though it is often cited as an overlooked stage in the planning cycle. More publishing and communication of best practices of the methods might help to close the gap in the planning process.

Other ideas for future research include investigating the specific calculations used in quantifying indicators, extent of inter-jurisdictional benchmarking, presentation of information and communication with the community in the internet age, cross comparisons of reporting strategies, and the best ways to apply evaluation and monitoring techniques within the constraints of a limited budget.

Conclusion

Plan evaluation and monitoring is a key step in the process. Although it is sometimes reported to be a missing link in the planning process, this report found a wide variety of strategies at work in the planning practice. This report identified the strategies in use that link land use and transportation, and that evaluate planning programs in general. Many recommendations from current planners were revealed in interviews. More study is needed to determine the factors that influence the effectiveness of evaluation strategies employed. A compilation of best practices may help to further efforts at updating or creating effective programs within the planning profession.

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Appendix 1. Evaluation and Monitoring City Backgrounds and Interview Result Summaries[Austin, TX](#)[Carrboro, NC](#)[Chapel Hill, NC](#)[Charleston, SC](#)[Chicago, IL](#)[Jacksonville, FL](#)[Portland, OR](#)[San Francisco, CA](#)[Santa Monica, CA](#)[Seattle, WA](#)**Austin, Texas****I. Austin Plan Evaluation and Monitoring Background Review****Structure of government/departments in charge of planning**

Planning and Development Review Department (<http://www.ci.austin.tx.us/planning/>).

Neighborhood, Housing and Community Development is in a separate office.

State and local mandates

The Austin City Charter spells out specific items that need to be incorporated into the City's comprehensive plan (described in Article X: "Planning" in http://www.ci.austin.tx.us/compplan/comp_plan_faq.htm).

Projects in progress

The comprehensive plan overhaul process will kick off in Fall 2009 (<http://www.ci.austin.tx.us/compplan/>).

Comprehensive plan

Current comprehensive plan is entitled *Austin Tomorrow* (http://www.ci.austin.tx.us/compplan/comp_plan_austin_tomorrow.htm).

According to the plan, beginning in 1978, in even-numbered years, interim reports are required to be prepared by city agencies for review by the Planning Commission and the comprehensive planning citizen's board. The reports cover quantitative indicators and how they are derived. In odd years, the planning department is charged with creating a report on plan implementation, including qualitative and quantitative measures, outcome assessment, and economic and land use impact of the comprehensive plan.

The comprehensive plan and growth management system is due for revision and re-evaluation every 6 years, with two years lead up time for assessment of goals.

The following table illustrates the timing of monitoring and assessment (p. 157):

TABLE 4-8: SCHEDULE OF GROWTH MANAGEMENT ACTIVITIES

Activity \ Year	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02
Interim Reports																									
Comprehensive Reports																									
Development of New Alternatives																									
Full Scope Goals Program																									
Full Process and Program Evaluation																									

Other programs related to evaluation and monitoring

- Neighborhood plan review and implementation as described by the implementation coordinator interviewed, Melissa Laursen.
- Neighborhood Contact Teams serve as neighborhood organizers and liaisons with the planning department, providing leadership and feedback on the state of their neighborhoods and the plans (Melissa Laursen, telephone interview, May 4, 2009).
- The NPZD GIS team has many analyses in several areas underway (<http://www.ci.austin.tx.us/landuse/spatial.htm>).
- Various transportation studies have been conducted (scroll down to future plan updates) (<http://www.ci.austin.tx.us/transplan/>).

II. Austin Interview Report

Interviewee: Melissa Laursen

Title: Implementation Coordinator, Neighborhood Planning and Zoning Department

Date: May 4, 2009

a) Neighborhood plan evaluation and monitoring

One and a half years ago a specific position was created to monitor and coordinate implementation of neighborhood plans. Her position was essentially funded and created as a result of neighborhood residents' advocacy for implementation of their plans. Residents expressed the need for more implementation at a town hall meeting.

Many of the neighborhood plans have already been adopted. Now her task is to monitor all aspects of the neighborhood plans. She has a database of all of recommendations which are included in neighborhood plans. Some recommendations even include slowing speeding traffic, creek clean- ups and so forth. Right now she is assessing which objectives have been implemented, assessing project feasibility, prioritizing what remains to be done, and then streamlining various actions to improve the implementation of neighborhood plans both in the short term and the long term. Some recommendations in the neighborhoods' plans might be too idealistic, or they could even be inconsistent with other plans and policies, or they may not have a funding source. Although the economy is in a downturn, she can still attempt to get funding from the capital improvement plan budget. She is working with the neighborhoods to identify the top ten realistic priorities, and working within government and other agencies to get them implemented. After she identifies the needed projects, she sends a report to the responsible department—i.e. public works-- to then update their individual department plans.

All of the neighborhoods have their own neighborhood contact team—they help with plan creation and implementation. They are well-organized with monthly meetings, procedures, and by-laws. The teams are the stewards of the neighborhood plan. One of the planners' tasks is to work with the teams, guiding them through the planning process and keeping membership lists up to date. The planners are helping the teams implement smaller projects on their own, teaching them how to apply for grants, and training them to advocate for their neighborhood. Her tracking will be used to go back and revise neighborhood plans to be feasible and to help coordinate their implementation.

Evaluation and monitoring data management: There are about 2700 approved recommendations within the neighborhood plans, stored in an Access database. She sends the teams a spreadsheet of the recommendations with a column to comment on the status and any changes to be made. She would like to start tracking quantitative measures of neighborhood plan implementation in the future. They will need to figure out how to present the numbers—either number of projects completed or number of dollars invested per neighborhood—either could be tricky politically. She's considering how best to present the tracking data to reflect the progress of neighborhood plan implementation. They may consider using benchmarks in the future.

b) Citywide evaluation and monitoring

They are beginning an overhaul of the comprehensive plan this summer (a different division is responsible for this).

c) Successful strategies

If other cities have neighborhood plans it would be good to have a neighborhood implementation liaison from the start. Creating relationships with neighborhood residents and city staff is a key to success—

she serves as a liaison between neighborhoods and all the other city departments. The neighborhoods may work for 2 years to develop their plans—then they sometimes sat on a shelf. Now finally she is examining ‘what can we get done?’ At the same time she is working within the government, she also assists the teams to find ways that they can make the neighborhood look better, to write grants, and so forth, and all of these action help them to achieve their visions and goals.

d) Recommendations derived from interview

- Neighborhood plan advisory teams can be an integral part of creating, evaluating and implementing neighborhood plans
- Planners can also train and assist neighborhood groups in implementing and coordinating smaller projects and applying for grants
- A neighborhood plan implementation liaison can be instrumental in making plans happen, and in making better neighborhood plans
- Forging good relationships among city departments is important in accomplishing planning tasks
- Although plan-making may be initiated by the neighborhoods, it is important to have staff dedicated to assisting in the process, ensuring that plans are feasible and consistent with government policies and ordinances
- Town hall meetings may be a critical forum for evaluating the success of local plans

Carrboro, North Carolina

I. Carrboro Plan Evaluation and Monitoring Background Review

Structure of government/departments in charge of planning

Planning Department, covering planning, zoning, and inspections
(<http://www.townofcarrboro.org/pzi/default.htm>).

Comprehensive plan

Found at <http://www.townofcarrboro.org/PZI/dv.htm>. There is some mention of targets in the Vision plan, but nothing specific on monitoring.

Other programs related to evaluation and monitoring

- The annual Budget Report contains performance measures, mostly relating to how many projects approved, number of staff, financial measures, etc.
(<http://www.townofcarrboro.org/MS/Budget/Adopted/0809/Complete.pdf>)

- The following documents and more are found at: <http://www.townofcarrboro.org/docs.htm>
 - Downtown Carrboro Market Analysis
 - Vision 2020: Downtown Carrboro Visioning charette report
 - Benthic Macroinvertebrate Surveys in Bolin Creek
 - Carrboro 2005 Mobility Report Card
- Carrboro evaluates each new ordinance update for consistency with other plans and ordinances (Roy Williford, telephone interview, April 13, 2009).
- Also, Carrboro is participating in the UNC School of Government benchmarking program along with other municipalities in North Carolina, known as Institute of Government (<http://www.sog.unc.edu/programs/perfmeas/index.html>).

II. Carrboro Interview Report

Interviewee: Roy Williford

Title: Planning Director, Planning Department

Date: April 13, 2009

a) Citywide evaluation and monitoring

Carrboro completed a revision of the Land Use Ordinance this year—last time was 6 years ago. Part of the revision process was ensuring that all of the plans are consistent.

b) Neighborhood plan evaluation and monitoring

They have numerous and active citizen advisory boards who participate in project and plan creation.

c) Issue-based evaluation

- Safe Routes to Schools program involved qualitative plan evaluation from community participation.
- The Greenways commission is one example of a citizen advisory committee who was very involved in devising the greenways design plan, working with the town and a consultant.

d) Software tools

Carrboro uses MS Project to monitor plans and projects in order to keep to a schedule of completion, along with an MS Access database for legislative requirements. They also use Geographic Information Systems (GIS). Occasionally they use Survey Monkey to gather information on a specific issue.

e) Other evaluation and monitoring practices

Project-based evaluation: they monitor the progress of each project and prioritize a list of ten to present to the county board at the annual budget meeting. General performance measures (ex. permits approved etc.) are presented in the annual budget report.

Any amendment of the land use ordinance prompts a review to ensure consistency and a statement of applicable plans.

For building permits and inspections evaluation, they utilize the Institute of Government's (A UNC School of Government initiative) program to measure performance in certain areas to benchmark with other cities to improve service, effectiveness, efficiency.

f) Successful strategies and recommendations

He would wish for more staff and more time to accomplish more plan evaluation and monitoring.

f) Recommendations derived from interview

- An active community, participating on numerous community advisory boards, can extend the efforts of the planning department in evaluating plans
- Project-tracking software can assist in keeping development applications on-time
- Plan consistency is a key part of monitoring

Chapel Hill, North Carolina

I. Chapel Hill Plan Evaluation and Monitoring Background Review

Structure of government/departments in charge of planning

Planning and Development Department (<http://www.ci.chapel-hill.nc.us/index.aspx?NID=69>).

State /Local Mandates

The planning department's internal policy is to update the comprehensive plan every 5 years (J.B. Culpepper, telephone interview, May 22, 2009).

Projects in progress

Currently kicking off the Sustainability Visioning Task Force (<http://www.townofchapelhill.org/index.aspx?page=1131>).

Comprehensive plan

The latest was adopted May 8, 2000 (<http://www.townofchapelhill.org/index.aspx?page=1047>)

See Ch. 13, p. 69 for plan implementation and monitoring sections.

It is stated that the Growth Management Report and Data Book will be produced annually to track progress of the plan—although this has not occurred every year (p. 75, Plan Monitoring).

Indicators: see Table 3, p. 78 for indicators to be used to monitor the comprehensive plan.

Other programs related to evaluation and monitoring

The following documents are found at <http://www.ci.chapel-hill.nc.us/index.aspx?page=608>

- *Chapel Hill Indicators Reports*: an impressive collection of straight-forward indicators that are related to the comprehensive plan. Most show progress. Does not include recommendations

of how to respond to the data, or identification of needs and issues in future planning (could be found in another form or document).

- *Mobility Report Card*
- *Chapel Hill Data Books*

Town Planning Retreat establishes the strategic plan which contains the Council's goals for 2009-10 (<http://www.townofchapelhill.org/Modules/ShowDocument.aspx?documentid=2457>). "The Council's process for goal-setting starts with a review of 2008 successes, trends for the future and suggested priorities by the Town's senior management team," which helps prioritize the allocation of resources.

II. Chapel Hill Interview Report

Interviewee: Ms. J.B. Culpepper

Title: Planning Director, Planning and Development Department

Date: May 22, 2009

a) Citywide evaluation and monitoring

Planning department has an internal policy that determines that the comprehensive plan should be updated every 5 years.

There is an outstanding process in place to monitor the plan progress, although it hasn't been completed every year. There are three specific interrelated elements in the plan monitoring section in the comprehensive plan—it's a little bit of everything: 1) annual growth management report 2) periodic plan evaluation/revision 3) tracking community indicators. They started out completing these three steps, but time allocated to the monitoring tasks has gradually dropped off as their attention has been directed elsewhere. However, there is a lot of overlap of the tasks they are charged with. They are now working on the Sustainability Plan, is closely related to the starting point for comprehensive plan update.

Quantitative measures: A publication that has still been a getting greater length of time is the *Data Book*. In 2000 they had a consulting firm to help with revising the comprehensive plan—with goals, objectives, and strategies. The *Data Book* information is gathered from statistics from different departments, including fire, library, parks and recreation, census, and so forth. The task was to assemble and present the data from the different sources. Originally it was an annual undertaking, then every two years, now transitioning to an ongoing electronic presentation. The new format is useful because they can pull information together in order to highlight the important trends. Online content is an easier format for planners to present and the public to interpret.

Although it is not stated in the plan, they have an annual planning retreat with the council, in which they review elected officials' goals for the coming year. The document that comes out of this is called the

Strategic Plan. They annually provide council with information about trends, demographics, infrastructure, housing, and employment at this retreat, which helps to shape policy decision-making.

Qualitative measures: They have conducted community surveys as part of various initiatives that were addressed in the comprehensive plan. For example, for the Sustainability Visioning Task Force the Town has hired folks at the UNC School of Government to reach out into the community to gather ideas through forums and surveys, and a new ‘visioning wall’ (a forum for people to post their ideas which is on display at the local mall and library) to better understand what people value about Chapel Hill, and to understand what they want Chapel Hill to be like in future. The first week in June 2009 is the kickoff for events and initiatives to gather public input.

The Planning Board has an important role in the planning process—they are the ‘keepers of the plan’. The board consists of a group of citizens appointed by the council which serves as an advisory board to the city council. The board provides recommendations for comprehensive plan related activities, including plan evaluation and monitoring, such as the timing of revisions, etc.

b) Roles of outside agencies

Now more tasks are outsourced. The plan gives guidance as to how to accomplish goals and objectives, which may include updating ordinances, and sometimes consultants help with that process. For instance, consultants were used to help with the plan goal of formalizing inclusionary zoning.

c) Benchmarking

As they monitor local trends they are interested in how the town compares to state and national averages. In general they find similar trends as are evident at all levels such as aging population, reduction of physical activity, and so on.

d) Successful strategies

In reality the comprehensive plan can be seen as a living breathing document, rather than a static tome to only be revisited once every 5 years.

The key is integration. The comprehensive plan, its goals and objectives, and evaluation systems need to be woven through everything that you do. Everything is interrelated. The guiding principles should be linked to every department and every individual and what they are doing. It has to be more than a document that sits on a shelf. It needs to be tied into the process of establishing the work plan for the year. In crafting, implementing, and evaluating plans it has been important to have participation from inside government and the various departments. Success depends on the leadership and what they choose to embrace. All

departments should be aware of the plan and what it means, and it should be used uniformly throughout the town bureaucracy. It should be an integrated component of government.

e) Recommendations derived from interview

- Comprehensive plans can be thought of as dynamic documents that are a part of what guides the actions of departments in government
- Success of monitoring and evaluation programs depends on the leaderships' prioritization of them
- Gathering community feedback for evaluating plans for the future can be accomplished through forums, surveys, and utilizing new communication tools such as the participatory 'Visioning Wall' on display at the local library, and Facebook
- Some effective monitoring and evaluation techniques include: monitoring indicators, compiling statistical data, and reporting on growth management

Charleston, South Carolina

I. Charleston Plan Evaluation and Monitoring Background Review

Structure of government/departments in charge of planning

Department of Planning and Neighborhoods (<http://www.charlestoncity.info/dept/?nid=18>)

State Mandates

Review every 5 years, full revision every 10 years.

Comprehensive plan

Century V City Plan available at <http://www.charlestoncity.info/dept/content.aspx?nid=1304>

Note: this is a large file. A brief summary is presented on the general Charleston plan website (<http://www.charlestoncity.info/dept/content.aspx?nid=1304>).

The comprehensive plan calls for several studies to evaluate alternative transportation, and neighborhood development section contains several recommendations but the only measurable objectives involve park size and proximity to residents (pp. 30-31).

Other programs related to evaluation and monitoring

- Documents website lists demographic monitoring such as housing, economy, and population, from census (<http://www.charlestoncity.info/dept/content.aspx?nid=198>).
- *City of Charleston Fast Facts* is published annually, containing land area, annexation, demographics, and building permits issued (http://www.charlestoncity.info/shared/docs/0/fast_facts_2009.pdf).
- Public feedback mechanisms, such as meetings, mail-in survey's and online surveys are used (Christopher Morgan, telephone interview, April 3, 2009).

- The department provides support to neighborhood associations in the form of a 'How To' manual (<http://www.charlestoncity.info/dept/content.aspx?nid=198&cid=301>).

II. Charleston Interview Report

Interviewee: Christopher Morgan

Title: Planning Division Director, Department of Planning and Neighborhoods

Date: April 3, 2009

a) Citywide evaluation and monitoring

Planners conduct a review of the comprehensive plan every 5 years, full revision every 10 as required by the state.

They've chosen to do more upfront analysis rather than ongoing monitoring. The last plan revision process prior to 2000 included an extensive mail-in survey. For the current revision, they will probably use an online survey.

b) Neighborhood evaluation and monitoring

Many of their recently-adopted area plans involve finer-scaled assessments of neighborhoods. Area-wide plans include some targets. For example, John's Island has a goal of 30% of affordable housing.

c) Issue-based evaluation

Some community groups, such as the Coastal Conservation League, and the Historic Foundation, lend their expertise and input on issues such as sustainability and the environment within the planning process.

d) Other evaluation practices

They look to other communities for ideas on how to encourage residential infill, redevelopment, or accommodating growth, for example, to see what works well so they can apply it in their community.

e) Successful strategies

The department is very in tune with feedback from the public and council members. They are continuously evaluating their planning from a theoretical standpoint to be consistent with recommendations from the plan.

Skilled staff and a mayor supportive of planning, in combination with rigorous community feedback has made their department successful in their planning. Along with the 5 year revisions, and input from community groups, these qualities make a formal evaluation unnecessary.

f) Recommendations derived from interview

- Upfront analysis of neighborhoods is key to successful planning
- It is important to be in touch with the responses of the community
- Use community groups' expertise and input to improve the plan
- Look to other communities for ideas for implementing goals

Chicago, Illinois

I. Chicago Plan Evaluation and Monitoring Background Review

Structure of government/departments in charge of planning

Department of Zoning and Land Use Planning

(<http://egov.cityofchicago.org/city/webportal/portalEntityHomeAction.do?entityName=Zoning+and+Land+Use+Planning&entityNameEnumValue=204>)

Separate departments include: Department of Transportation, Department of the Environment, and department of Community Development. The latter was formed on Jan 1, 2009, merging Departments of Planning and Development, Housing and the Mayor's office of Workforce Development. It focuses more on economic development and housing, and lists other citywide initiatives such as green buildings (http://egov.cityofchicago.org/city/webportal/portalEntityHomeAction.do?BV_SessionID=@@@0524350504.1249591902@@@&BV_EngineID=cccdadehmiighgcefecelldffhdfhm.0&entityName=Planning+And+Development&entityNameEnumValue=32).

Regional planning is directed by CMAP, the Chicago Metropolitan Agency for Planning. It serves Cook, DuPage, Kane, Kendall, Lake, McHenry, and Will counties. *GOTO 2040* is an regional comprehensive planning initiative of CMAP (<http://www.goto2040.org/>). The larger Chicago metropolitan area spans sixty counties and three states. The interview covers planning only in the city of Chicago itself.

State Mandates

The city of Chicago is exempt from the state comprehensive plan mandate due to its large size. Due to this, the last complete comprehensive plan was created in the mid 1960s (Bennett Howler, telephone interview, June 8, 2009).

Projects in progress

The Mayor has a separate environmental agenda:

http://www.cityofchicago.org/webportal/COCWebPortal/COC_EDITORIAL/ActionAgenda.pdf

Other programs related to evaluation and monitoring

- Neighborhood Aldermen represent the neighborhoods to the planning commission.
- Public meetings, surveys, formation of steering committees, and other mechanisms for feedback are used when devising plans (Bennett Howler, telephone interview, June 8, 2009).
- Central Area Plan tracks land use changes and development.
- Department of Environment has a mechanism for reporting environmental hazards, dumping, and illegal activities.

II. Chicago Interview Report

Interviewee: Bennett Howler

Title: Director, Urban Design and Planning, Department of Zoning and Land Use Planning

Date: June 8, 2009

a) Citywide and neighborhood evaluation and monitoring

Smaller cities in Illinois have state requirements to write and revise comprehensive plans, and report back to state. There's an exception for cities over 1 million in population. Large cities, like Chicago, are not required to have a plan—last one was written in the mid 60s. However, they update plans on an as-needed basis. Notable plans now include the Central Area plan of 2003 which was significant for transportation and other dramatic changes downtown in a six square-mile area.

Much of his jurisdiction includes already built-out low-density development. Planning is most important in areas likely to have lots of change and new development, such as the South Side and the Calumet plan. In new plans, environmental and industrial resources are assessed along with other factors. During the updating process, previous plans are evaluated to gauge what has worked and what has not. Elements from the old plan that worked are revised to craft the new plan. When they revised downtown central area plan, they evaluated the earlier plan's forecasts for growth—office and residential—to check projections against what actually happened, in order to revise future projections.

Qualitative measures:

The general planning process consists of working with local alderman in creating a neighborhood plan or industrial study. There are about 50 alderman serving on geographically based boards --each one represents 50,000 people in Chicago. They conduct outreach in the neighborhoods to gather ideas and feedback, especially if there's a lot of change, or redevelopment, in the works.

Methods of gathering feedback depends on the project. Often, they use surveys and public meetings, but it is important to ask, are the participants a representative sample of the neighborhood? Often those who are happy with the neighborhood do not attend meetings and hearings. Important to get input from all --those who attend meetings may be the ones who have problems to report. The planning department has a role to provide data to help the Aldermen interpret their findings. For instance, many Aldermen assume all their constituents have 3 to 4 cars since the car owners are the ones who speak out to them about parking issues. However, the census data showed that the average is only 1.5 cars per household. Interpreting feedback with the support of data helps to identify the relative importance of some planning issues.

Another aspect that can shape stakeholder's feedback at community meetings is whether or not there is a particular large development project involved. It can be hard to create a consensus because of perceptions that the city is pushing an unwanted project on the neighborhood. These concerns need to be addressed before consensus can be reached.

It's important to try to think about who is not represented in a community meeting. If meeting attendants are Anglo while the neighborhood as a whole is majority Latino or Asian, how representative is it?

They have worked with Metropolitan Planning Council (MPC) who has a mechanism for remote voting in meetings. The question is how to take the data and use it correctly. A broad question about mode choice of travel to work is often valuable and useful, but a specific question about opinions about a particular development is not. Visual preference surveys are also tricky because they can involve too much bias depending on how the design is represented.

Quantitative measures:

The Central area plan includes tracking of retail development etc. This information is crucial when making zoning changes. It establishes the scale, timing and type of past and present development to determine future development forecasts.

Data used to forecast behavior must be carefully interpreted. For example, there is not always a one to one correspondence between actions and results. For example, transit trips generated by building a station doesn't necessarily take away all trips by car—some people may ride and drive in addition. They believe in data-driven planning decision-making with careful interpretation of results.

Role of outside agencies:

They often work with the MPC (Metropolitan Planning Council). And the RTA, the umbrella transportation authority, who funds 80% of planning studies.

The process for new plans usually includes a steering committee, which can consist of representatives from transportation, industrial council, neighborhood groups, the Center for Neighborhood Technology, and so forth, depending on who's affected by the plans.

b) Issue-based evaluation—Sustainability

They were involved in some of the green urban design target-setting in Chicago. It is important to be realistic about what goals they can accomplish with the 1% of new construction. Some of the specific target numbers were somewhat idealistic. When setting numeric targets it is important to address how to reach them. It is a challenge to retroactively apply green city principles to an already built city. Actually they are ahead of newer growing cities for future energy consumption, because the city already has a huge amount of embodied energy in all of its buildings. It is a good idea to focusing on how to make existing buildings sustainable. A lot of green design isn't as dramatic as flashy new buildings.

Coordination between multiple agencies is a key part of implementing the green design plans. The planning department was involved in terms of their typical land use plans: where, what scale, timing, what density of development. The energy efficiency codes are updated, so new construction will perform better, although whether goals are met exactly as predicted remains to be seen.

c) Successful strategies

They don't have a formal institutionalized evaluation process but they do look at old plans and evaluate them when designing new ones. Planning commission is charged with reviewing and updating plans but that isn't in essence what they actually do. New York and Los Angeles have a similar approach: neither plan an entire city through one commission because the scale is too broad, and also in theory a healthy, larger, slow-growing city won't need as much intervention as a smaller new city. Their approach is to evaluate closely at the neighborhood scale as the need arises.

The planning process is inclusive: one purpose is to get people together so they can come to understand that there are rational reasons why people feel the way they do. The planning dialogue can bring focus and unity to the community so that all are on the same page as far as what direction plans are going to take. Plans will be successful and viable if there is consensus and understanding of opposing viewpoints upfront.

d) Recommendations derived from interview

- Consensus building upfront within the community can lead to more successful plans, with better evaluations down the road
- When setting targets, such as in a sustainability plan, it is important to also set out the realistic methods to get to those targets
- Qualitative data gathered from the community through forums and surveys should be interpreted carefully depending on whether the group is a representative sample of the wider constituency
- Consider forming a steering committee for large new projects on a case-by-case basis, including representatives from major groups involved and affected by the project
- When devising new plans, compare old forecasting data to outcomes as one assessment of the plan-making process
- It is important to support neighborhood-based planning groups with data about their constituencies to inform their decision-making
- Statistical evidence behind planning issues can be misinterpreted—one of planner's roles can be to dispel misconceptions based on the inaccurate use of data

Jacksonville, Florida**I. Jacksonville Plan Evaluation and Monitoring Background Review****Structure of government/departments in charge of planning**

Planning and Development Department

(<http://www.coj.net/Departments/Planning+and+Development/default.htm>)

State Mandates

Florida State requires comprehensive plans and periodic evaluations. The Evaluation and Appraisal Report (EAR) is required to be completed before the old plans are updated. The EAR evaluates successes and failures of the plan's objectives and recommends changes (William Killingsworth, email interview, May 30, 2009).

Projects in progress

- *Vision Plans Update:* The City of Jacksonville has begun a year long planning study to develop a Vision for three of their planning districts. The city has created an online discussion group and an email distribution list to solicit input from the community (<http://www.coj.net/Departments/Planning+and+Development/Community+Planning/default.htm>).
- *EAR (Evaluation and Appraisal Report)*
 - *Tracking Chart* is a catalog of the recommendations from the EAR connecting recommendations to their section of the comprehensive plan
<http://www.coj.net/NR/rdonlyres/ewjqqr3yzvrsvjtnkalyy3ds2g4qfppxaizljio7eqbuit7icim4zqjk7vfrufjm3qeejavoynjfebwjsmv5g553t5h/EAR+Recommendation+Tracking+Chart+2.27.09+FINAL.pdf>
 - Monitoring of recycling and waste reduction, and congestion in transportation systems is included in chart (p. 42 and 7).
- *Annual Statistical Package* contains statistics on population, real estate, and economy (<http://www.coj.net/Departments/Planning+and+Development/Department+Documents.htm>).
- *Growth Management Task Force* report contains recommendations to the mayor on how the city should grow (<http://www.coj.net/Departments/Planning+and+Development/Current+Planning/Growth+Management+Task+Force.htm>).

Other evaluation and monitoring practices

There is a separate indicator monitoring program involving city of Jacksonville government, entitled the "Blueprint for Prosperity." Below is an excerpt from the City of Jacksonville website describing the program (Jacksonville, City of, N.d.):

In April 2005, the City of Jacksonville, the Jacksonville Regional Chamber of Commerce and WorkSource embarked on Blueprint for Prosperity, a comprehensive strategic plan designed to improve our community and raise the income of Duval County residents by concentrating efforts in six foundation areas: Education, Economic Development, Quality of Life, Racial Opportunity & Harmony, Infrastructure and Leadership.

Each of these targeted areas of improvement is led by a team of volunteers who implement identified strategies in each foundation by recruiting Blueprint Partners and facilitating alliances among key community organizations.

Jacksonville, City of. (N.d.) Blueprint for Prosperity Process. Retrieved June 20, 2009 from

<http://www.coj.net/Mayor/Blueprint+for+Prosperity/2008+Community+Progress+Report/Process.htm>

II. Jacksonville Interview Report

Interviewee: William B. Killingsworth

Title: Community Planning Division Chief, Planning and Development Department

Date: May 30, 2009 (edited written interview)

a) Citywide evaluation and monitoring

Pursuant to Florida State Law (Chapter 163.3191, F.S.), every 7 years the City of Jacksonville is required to evaluate and appraise the entire comprehensive Plan. The City of Jacksonville 2010 Comprehensive Plan consists of 10 elements: Future Land Use, Capital Improvements, Infrastructure, Transportation, Conservation/Coastal Management, Recreation and Open Space, Intergovernmental Coordination, Housing, Public Schools and Facilities and Historic Preservation.

However, the plan is always subject to evaluation and amendment. For example, the plan can be revised and amended, up to two times per year, as issues arise with provisions within the plan or as new and innovative planning practices require amendments to the plan to facilitate implementation.

In addition to a review and evaluation of the comprehensive plan in effect at the time for the Evaluation and Appraisal Report and Pursuant to Section 163.3191(c), F.S., local governments identify the major issues, if applicable, with input from state agencies, regional agencies, adjacent local governments, and the public in the evaluation and appraisal report process. It is also the intent of this section to establish minimum requirements for information to ensure predictability, certainty, and integrity in the growth management process. The report is intended to serve as a summary audit of the actions that a local government has undertaken and identify changes that it may need to make. The report should be based on the local government's analysis of major issues to further the community's goals consistent with statewide minimum standards. The report is not intended to require a comprehensive rewrite of the elements within the local plan, unless a local government chooses to do so.

Implementation: Pursuant to Florida State Law (Chapter 163.3191, F.S.), recommendations resulting from the Evaluation and Appraisal Report (EAR) must be implemented within 18 months of adoption of the EAR. Implementation is typically done through text amendments to the various elements of the plan.

Quantitative and Qualitative analysis: The adopted September 2007 Evaluation and Appraisal Report (EAR) introduction describes the evaluation techniques, public participation and other data analysis. The report requirements are quite specific, including assessing implementation, analysis of community data such as census and developable land, identifying issues and challenges, financing of objectives, interagency coordination, coastal hazard plan assessment, etc.

In addition to the EAR, the planning department also produces an Annual Statistical Report, which is a thorough report on current and future projections of demographics, real estate, and the economy.

b) Software tools

Geospatial data management and analysis was conducted using Environmental Systems Research Institute's (ESRI) ArcGIS 9.

c) Role of outside agencies

Technical assistance and support from the State Department of Community Affairs (DCA) and the regional planning agency (Northeast Florida Regional Council) help identify issues and direct our evaluation and appraisal.

e) Recommendations derived from interview

- State requirements vary significantly and can greatly influence the degree and type of plan evaluation and monitoring that occurs
- The State of Florida is one model of a very thorough planning structure, including in-depth data analysis and forecasting, periodic plan quality evaluation, and monitoring of implementation
- Outside of the mandated evaluation procedures, plans may need to be adjusted according to issues innovations that arise, reflecting current practices

Portland, Oregon

I. Portland Plan Evaluation and Monitoring Background Review

Structure of government/departments in charge of planning

The Bureau of Planning and the Office of Sustainable Development recently merged to form the *Bureau of Planning and Sustainability* (<http://www.portlandonline.com/bps/>).

State Mandates

State of Oregon requires each city and county to adopt a comprehensive plan, with zoning and ordinances to implement it. Local plans must be consistent with the 19 statewide planning goals. Some land use planning takes place at the state level (<http://www.lcd.state.or.us/LCD/goals.shtml>).

Projects in progress

Currently, the city is revising the Portland Plan, and gathering public input etc. A community involvement committee will monitor and make recommendations to improve community involvement
<http://www.portlandonline.com/portlandplan/index.cfm?c=47906#Timing>

Comprehensive plan

- Comprehensive Plan Assessment draft for public review
 (<http://www.portlandonline.com/portlandplan/index.cfm?c=47107&a=191249>).
- Previous comprehensive plan from 1980, with updates up until 2006
- (<http://www.portlandonline.com/planning/index.cfm?c=47556&a=141397>)
- Portland plan fact sheet:

<http://www.portlandonline.com/portlandplan/index.cfm?c=46822&a=187519> Excerpt below:

Measurement/Evaluation

As the years go by, we'll need to know if we are achieving our goals. Performance measures to evaluate the effectiveness of the Portland Plan will help us determine:

1. Actual conditions to establish a baseline against which to measure progress over time;
2. Public perceptions of what the conditions are and how we're doing; and
3. Actual performance and outcomes.

These evaluation mechanisms will help the city be accountable to its residents and determine where corrections need to be made to more closely reach our targeted goals.

Other programs related to evaluation and monitoring

- Portland plan document links: <http://www.portlandonline.com/portlandplan/index.cfm?c=46822>
- The City Auditor's office conducts an annual neighborhood survey. The last one listed is 2007 at <http://www.portlandonline.com/auditor/auditservices/residentsurvey2007/>
- (click on a neighborhood to see the questions listed). It is unclear how many and the percentages of households/businesses who completed the survey, and who uses the survey results and how.
- The River Report referenced in the interview:
<http://www.portlandonline.com/river/index.cfm?c=39359&a=88541>
- The Environmental Planning Division is conducting ongoing Natural Resources Inventory
 (<http://www.portlandonline.com/bps/index.cfm?c=40437>).
- Economic Development webpage lists several in-depth studies and reports including industrial land supply, Urban Growth Functional Compliance Report, and Vacant Land Inventory Methodology Report
 (<http://www.portlandonline.com/bps/index.cfm?c=47527>).
- Benchmarks, comparing population, housing, and sustainability statistics with other US cities can be found in the Big Cities Fact Book, produced annually
 (<http://www.portlandonline.com/bps/index.cfm?c=47518&a=228920>).

- Regulatory Improvement Program seeks to conduct one in-depth study in response to feedback annually (Eric Ingstrom, telephone interview, May 6, 2009).

II. Portland Interview Report

Interviewee: Eric Ingstrom

Title: Principal Planner, Bureau of Planning and Sustainability

Date: May 6, 2009

a) Citywide and neighborhood plan evaluation and monitoring

Qualitative Measures: The auditor's office conducts a general city-wide audit each year. It is basically a report on satisfaction with urban neighborhood planning, using a survey method. For the planners, it helps to highlight which parts of the city that plans are working well in, and which need attention. Sometimes areas with more intensive growth without a specific detailed plan, for example, show dissatisfaction, and this helps to focus planning efforts.

Quantitative Measures: Most plans are structured to contain specified actions to meet plan objectives. Periodically they produce a scorecard on plan implementation, including % of actions complete. Scorecards are drawn up during central city plan updates, from a few years to ten years after the previous plan is instated. One of the important measurable components of the new Portland plan (currently being devised) is to link it with the new climate action plan— including carbon footprint goals. One of highest benchmarks they are considering setting is obtaining Kyoto protocol standards.

Another data point that they measure and monitor is mode split of travel in city—single occupancy versus other forms of transportation.

b) issue-based evaluation and monitoring

Another qualitative/quantitative way that they monitor is through the regulatory improvement program. A few staff have the task to keep a database of complaints about comprehensive plan and zoning codes. They prioritize complaints, and choose an important topic to write a monitoring report about annually. For example, in 2002, the planning department wrote new subdivision codes. This group did a monitoring report on the success of the changes based on the public's reaction. In 1990, the planners changed the zoning code to allow accessory dwelling units. This group conducted a report in 2001 to monitor the effects of the policy— to identify issues, determine if it was working etc.

For specific programs they will conduct a 'state of' report. For example, a 'state of the river' report was created and presented to city council. This was about more than monitoring a plan—it was about monitoring the health of the river. It contained a mix of qualitative and quantitative measures, such as water quality, recreational use, and lists of accomplishments.

c) Other practices

They occasionally use consultants and other agencies to assist in evaluation and monitoring in specific cases.

d) Software tools used for evaluation and monitoring practices

They utilize transportation models, GIS for analysis and tracking, and have increasing use of 3D modeling software that goes beyond just visual outputs. They are currently looking into other software that models urban performance.

e) Successful strategies

Currently, during revision of the Portland comprehensive plan, they are trying to integrate performance measures into the plan. Monitoring should be more integrated with the plan in the future than with the current plan, which should better facilitate monitoring.

In reality they often monitor things beyond the direct control of the planning department. There are different ways to administer the goals of the comprehensive plan—their philosophy is that part of their job as planners is to affect change towards these goals. Some of their evaluation and monitoring activities serve a purpose of community awareness and education, affecting the attitude of the community towards the issues. Another tactic is to focus more on forging partnerships with other entities. For example, one year, reducing the high school drop out rate was the mayor's priority and he wanted it included in the comprehensive plan. The question is, how can the planning department act to improve this indicator? The strategy was to consider how the planning department could bring resources to the school district to improve the problem. They've found it is effective to build more creative partnerships rather than rigidly focus on implementing plans under their department's purview.

Another successful tactic as they monitor plans is to involve the people who are working in the area that they are monitoring. For example, if they are monitoring implementation of zoning codes, they involve people who are implementing it—at the front counter, so to speak. If they are monitoring schools' performance, they work with the school system. It is important to talk to the people who are involved.

Identifying priorities for monitoring: For a metric like carbon footprint—it is sort of a 10,000 ft. level analysis. Qualitative input lends itself to a tighter feedback loop. The scale of analysis partly determines what you are monitoring (and vice versa). The list of things to monitor and the data that they have access to is more than the planners themselves can do anything about. The management must decide what measures they want to focus energy and resources on, either to monitor and/or affect change. 66% of the work is to determine which indicators or data analyses are meaningful to include. At a more detailed level, one example of this dilemma is that they may get 300 requests to look at various policies—must decide which to monitor due to resource constraints.

f) Recommendations derived from interview

- One way to assist in monitoring efforts is to integrate measurable goals into the comprehensive plan.
- Consider creative efforts to reach goals of plans by creating partnerships with other departments within government
- Involve people in the front line of implementation in monitoring efforts
- Carefully prioritize what to measure and what areas to evaluate and monitor in depth
- Consider reports and evaluations as tools to affect change within the community and government beyond the planning department
- Seek information about satisfaction at the neighborhood level
- The scale of analysis determines the factors to be monitored; consider scale carefully

San Francisco, California**I. San Francisco Plan Evaluation and Monitoring Background Review****Structure of government/departments in charge of planning**

San Francisco Department of Planning (http://www.sfgov.org/site/planning_index.asp).

State and Local Mandates

It is required by San Francisco Administrative Code that the city complete an annual report and a five-year report. The downtown plan monitoring report is required to cover several topics as outlined in the Chapter One portable document format of the Downtown Monitoring Report.

State law mandates that every California City and county adopt "a comprehensive, long-term general plan." The purpose is to plan for important community needs such as new growth, housing, and environmental protection. Furthermore, the general plan is used to project future growth demand services for sewer, water, roadways, parks, and emergency services. The elements of the general plan make up the framework for decision-making regarding growth and development in the City. State law requires that a general plan contain seven (7) mandated elements.

Projects in progress

Citywide Action Plan and Better Neighborhoods Programs
(http://www.sfgov.org/site/planning_index.asp?id=25054).

Comprehensive plan

Called the 'General Plan' (http://www.sfgov.org/site/planning_index.asp?id=41423).

Overall the General Plan contains policy goals rather than specific targets or actions.

The Transportation Element contains many progressive goals, and a clear transit/ alternative transportation focus. According to plans, transportation performance measures should reflect accessibility, movement of people and goods, not just cars. There are a variety of multimodal indices that go beyond traditional 'Level Of Service' or 'Vehicle-Miles of Travel', including Modal Split, Person Throughput, and Accessibility (proximity of people to activities).

The Recreation and Open Space Element has a target for acres of park per population (http://www.sfgov.org/site/planning_index.asp?id=41414).

Other programs related to evaluation and monitoring

- The Downtown Monitoring Report (http://www.sfgov.org/site/planning_index.asp?id=25057) evaluates actual statistics economy and commerce downtown to projected ones in the previous plan (1985). It also evaluates some of the implementation of the design guidelines, analyzing form and functions in some of the taller buildings as compared to the goals set out in plans.
- Several reports, in-depth analysis and periodic evaluations are available online (http://www.sfgov.org/site/planning_index.asp?id=25057).
 - A *housing inventory* and a *commerce and industry inventory* are completed annually
 - Also included are Issue Papers, including parking policy paper, etc.
- Time Series reports are conducted for small area plans two years after a plan is adopted, and every 5 years thereafter (Kearstin Dischinger, telephone interview, June 2, 2009).
- Community advisory committees represent every neighborhood and are charged with tasks related to implementation monitoring (Kearstin Dischinger, telephone interview, June 2, 2009)
- They also write an annual report to the board of supervisors assessing whether infrastructure is in fact up to standards in regards to development (Kearstin Dischinger, telephone interview, June 2, 2009).
- The Pipeline Report is published quarterly, which enumerates the development proposals throughout city and where each stands in the review and construction process (Kearstin Dischinger, telephone interview, June 2, 2009) (http://www.sfgov.org/site/planning_index.asp?id=58508)
- Community feedback is gathered through media such as survey monkey, community meetings, and office hours (Kearstin Dischinger, telephone interview, June 2, 2009).

II. San Francisco Interview Report

Interviewee: Kearstin Dischinger

Title: Citywide Policy Planner, Planning Department

Date: June 2, 2009

a) Neighborhood plan evaluation and monitoring

Time series reports are conducted for small area plans 2 years after the plan is adopted, and every 5 years thereafter. They are essentially longitudinal analyses that examines progress towards the goals and objectives set out in the plan. For example, they will be conducting a time series for the Market and Octavia plan, since the planning code was revised and new zoning categories were created 2 years ago. The time series report is an effort to answer the question: 'Is it performing the way it was intended?' Assessments of design guidelines in the neighborhoods is one qualitative element of the time series discussion. Every neighborhood plan has own unique political dynamics, and might carry different issues to monitor. Some of these are captured in time series assessments, others are explored in further studies. For example, renter versus owner parking is an issue that they might evaluate in a specific community in more depth. Some evaluation/monitoring initiatives are policy issues that have emerged more recently, such as the Better Neighborhoods Program (these are all mixed-use neighborhoods), for which they also conduct time series reports.

Eastern neighborhood and designated 'Better neighborhoods' have a community advisory committee who are charged with three main tasks: 1. prioritize infrastructure needs, 2. help with enforcement, 3. help with monitoring efforts. The committees are appointed by the board of supervisors and mayor. They provide valuable input and bring questions and issues to the attention of local policymakers and planners. The Downtown Report, which includes annual and time series components, was instated 1985. The Downtown Report is created every 5 years. This report has specific indicators relating to the fact that it is the financial district. Vacancy rates, commuting, housing—these are some of the areas that are required to be tracked by the administrative code.

b) Citywide evaluation and monitoring

Annual reports: The Housing Inventory and the Commerce and Industry reports that were part of the original Downtown Report are now done for the entire city as well. These annual reports basically take stock of trends in local statistics and census data. They are used for a variety of planning purposes throughout the city. They help decision makers get a good perspective on the state of the community.

Comprehensive plan revisions and timing: They are currently updating the comprehensive plan elements of recreation, open space, and housing. Usually they focus on an update of each dimension on varying time schedules. According to state law they are required to revise the housing element every 5 years. Most sections are updated as they deem necessary. The comprehensive plan as a whole is a 20-year plan; however, different sections may be updated every 5 or every 10 years.

All new plans coordinate housing and commercial growth with the infrastructure to support it. They've instated impact fees, and required infrastructure plans—such as open space, streetscape, public facilities—for

new developments. They also write an annual report to the board of supervisors assessing whether infrastructure is in fact up to standards in regards to development.

c) Project monitoring

The Pipeline Report is published quarterly, which enumerates the development proposals throughout city and where each stands in the review and construction process.

d) Issue-based evaluation

Every neighborhood plan has own unique political dynamics, and might carry different issues to monitor. Some of these are captured in time series assessments, others are explored in further studies. For example, renter versus owner parking is an issue that they might evaluate in a specific community in more depth.

e) Software tools and data sources

The data gathering methods depends on the research question being asked. They use a variety of tools. In addition to the data gathering mentioned previously, some other methods they have used include survey monkey, community meetings, and office hours. They of course use GIS, and some functionality is made publicly accessible. Most of their analysis is based on standard sources. They keep an internal database of projects; the building inspector has a specific software to track inspections. Some state data is maintained by the housing department and so on. They sometimes use American Community Survey in their analyses although it is not as accurate as would be preferred. They recently updated the interface of the permit tracking system as part of efforts to become more strategically effective.

f) Successful strategies

So far, their strategies are working successfully, although they are always re-evaluating according to results of neighborhood assessments etc. One main successful strategy is that they do not have a formulaic response to planning questions—flexibility is important to respond the most effectively in each situation.

g) Recommendations derived from interview

- Be flexible in responses to planning questions to best tailor data gathering and analysis to the situation
- Each neighborhood may carry different policy challenges that may require different evaluation and monitoring responses
- Consider evaluating coordination of infrastructure and development

- Consider having a somewhat flexible timeline for updating elements of the comprehensive plan rather than updating all of them at the same time
- An annual report such as a housing, commerce, and industry inventory may be an effective way to gain a snapshot of local statistics of the state of the community (perhaps without the extra burden of large amounts of indicators)
- Community advisory committees can be an effective way to perform some planning functions such as infrastructure prioritization, enforcement, and monitoring.
- Consider using a 'time series' approach to neighborhood plan evaluation which analyzes plan progress over time

Santa Monica, California

I. Santa Monica Plan Evaluation and Monitoring Background Review

Structure of government/departments in charge of planning

Planning and Community Development Department (<http://www01.smgov.net/planning/>). The City Planning Division oversees development review functions. The office of Sustainability and the Environment (<http://www.smgov.net/departments/ose/>) is charged with reporting on the city sustainability indicators, among other responsibilities. Many indicators deal with planning issues.

State Mandates

State law mandates that every California City and county adopt "a comprehensive, long-term general plan." The purpose is to plan for important community needs such as new growth, housing, and environmental protection. Furthermore, the general plan is used to project future growth demand services for sewer, water, roadways, parks, and emergency services. The elements of the general plan make up the framework for decision-making regarding growth and development in the City. State law requires that a general plan contain seven (7) mandated elements.

From: http://www.shapethefuture2025.net/general_plan.html

Projects in progress

They are in the process of updating the General Land Use, Zoning, and Transportation plans (<http://www.shapethefuture2025.net/>). Documents relating to the plan revisions can be found at: http://www.shapethefuture2025.net/library_plan.html

Comprehensive plan

There is a 2006 sustainable city plan

(http://www01.smgov.net/epd/scp/pdf/SCP_2006_Adopted_Plan.pdf).

The prior comprehensive plan, from 1984, is somewhat outdated.

Other programs related to evaluation and monitoring

- Sustainable City Report Card from 2008
(http://www01.smgov.net/epd/scpr/SCRC_ReportCard_2008.pdf).
- Other sustainable city reports (<http://www01.smgov.net/epd/scp/>).
- Monitoring and evaluation happens through plan conformity through the permitting process (Amanda Schachter, telephone interview, April 30, 2009).
- Plans are also evaluated to incorporate sustainability goals by the Office of Sustainability and the Environment (Shannon Parry, telephone interview, April 30, 2009).
- Sustainability indicators were developed with community input (Shannon Parry, telephone interview, April 30, 2009).

II. Santa Monica Interview Report

Interviewees: Amanda Schachter, City Planning Manager, Planning and Community Development Department (comments in black), and Shannon Parry, Sustainable City Program Manager, Office of Sustainability and the Environment (comments in red)

Date: April 30, 2009

a) Citywide evaluation and monitoring

Development Review: Monitoring and evaluation happens through plan conformity through the permitting process, rather than through annual reports, or other formal monitoring systems. Ms. Schachter's division focuses on development review functions. Developments are reviewed to determine if they are in compliance with ordinances in order to be approved. Then the planning commission reviews the application for compliance with the general plan. When working with applicants, the development projects that they file don't always fit urban design goals, etc. So they use the general plans and ordinances as tools to help developers make modifications. They even include illustrations to show developers what they want. The goal is for the development approval process to go more smoothly for everyone's benefit, and to result in projects that meet code and the goals of the plan.

How results are used: Ms. Schachter's department also reviews one type of permit which involves a negotiated agreement, in which the developers are required to provide a specific public benefit with the developer. Usually it involves fees or requirements for traffic mitigation, parks and open space, affordable

housing, or even child care. Then they monitor compliance with the required public benefits. This is a special case of development permitting that is enforced through monitoring of the developers.

Benchmarking: The long range policy development division of the planning department is now creating a new land use and circulation element. They always review other plans for guidance when drawing up new plans. Although they often find others look to them for ideas, but they do review what other jurisdictions are doing.

b) issue-based evaluation: Sustainability

The Office of Sustainability works closely with all the departments in the city. They work with Planning to see if sustainability goals are incorporated into the general plan updates, also with conservation, circulation, land use, housing, economic development, transportation, and even library plans. The sustainability plans began with recommendations from a council appointed community group. At first the emphasis was on municipal operations. Then it expanded to schools, colleges, the chamber of commerce, and business. Later, the city conducted a year-long visioning process with the community to identify the indicators that were important to them to track.

Now the indicators program has developed into eight goals areas, including resource conservation, environmental and public health, transportation, economic development, open space and land use, housing, community education and civic participation, and human dignity.

Quantitative measures: The Sustainability Progress Report involves a significant amount of data gathering. There are 80-120 indicators that make up the grades for the eight areas. At one time the progress report was produced every 5 years, and now it is annual. Soon they will switch to reporting every other year, leaving time during the intervening year to focus on programs and policies. All of the targets use 2000 as baseline and 2010 as the target year.

They have two ways of reporting results: a web-based tool, the "Progress Report," and a summary document, the "Report Card."

c) Successful strategies

From development permit process end it can be very staff intensive to ensure compliance with all of the standards, codes, ordinances, quality of life, and various plans, etc. The ideal is that the plans include conditions of approval that are easily enforced. Sometimes it can be difficult to motivate developers to comply. They generally have outstanding development, but it can be tricky balancing the need to enforce the details of codes with the need to approve developments.

d) Recommendations derived from interview

- Design plans with an eye for a smooth development permit approval process—specific, clear, and realistic guidelines are helpful to all of the parties involved in the approval process, including the community.
- In-depth data analysis should balance staff capacity for data gathering with staff capacity for program development, policy work, and communication of that data.
- Consider using a web-based presentation as well as portable document format and hard copies to communicate community evaluation results.
- Evaluating sustainability involves every department in government and every sector of the community. It is important to be able to effectively work across departmental lines to accomplish goals.

Seattle, Washington

I. Seattle Plan Evaluation and Monitoring Background Review

Structure of government/departments in charge of planning

The Department of Planning and Development oversees urban design and land use planning (<http://www.seattle.gov/dpd/>). Seattle Department of Neighborhoods and Development includes the Office of Housing, Office of Neighborhoods, and Office of Economic Development, and Office of Planning and Development. Transportation, and Sustainability and the Environment are separate offices. Transportation is largely controlled by a regional agency—Sound Transit, which includes King, Pierce, and Snohomish Counties.

State Mandates

Washington State mandates comprehensive planning in 29 counties and their cities. These places are required to evaluate comprehensive plans every 7 years, especially for consistency with regional plans and state law (Tom Hauger, telephone interview, May 4, 2009).

Projects in progress

- Neighborhood planning workshops
(http://www.seattle.gov/dpd/Planning/Neighborhood_Planning/Overview/default.asp).
- Just issued the draft Pedestrian Master Plan (<http://www.seattle.gov/transportation/>).

Comprehensive plan

Found at

http://www.seattle.gov/dpd/Planning/Seattle_s_Comprehensive_Plan/ComprehensivePlan/default.asp

The Comprehensive Plan is amended every year. Most of the plan does not appear to contain specifics on implementation or evaluation and monitoring, nor specific target numbers.

- One section has numbers for climate change, increasing tree canopy by 1% per year (http://www.seattle.gov/dpd/static/environment%20element_LatestReleased_DPDP016163.pdf).
- The transportation section of plan contains a section on performance measures (<http://www.seattle.gov/transportation/tsphome.htm>).

Other programs related to evaluation and monitoring

- Housing and Employment is tracked on a regular basis (Tom Hauger, telephone interview, May 4, 2009).
- Previous monitoring report is *2003: Monitoring Our Progress: Seattle's Comprehensive Plan* (http://www.seattle.gov/dpd/cms/groups/pan/@pan/@plan/@proj/documents/Web_Informational/dpd_001102.pdf). Scroll down on link above to find the *Urban Village Case Studies reports*, and the *Seattle Growth Report* (2000).
- *1998 Monitoring Growth Targets in Urban Villages and Urban Centers* (http://www.seattle.gov/dpd/cms/groups/pan/@pan/@plan/@proj/documents/Web_Informational/dpd_001008.pdf)
- Public involvement leading up to 2004 comprehensive plan overhaul (http://www.seattle.gov/dpd/Planning/Seattle_s_Comprehensive_Plan/Comprehensive_Plan_10-Year_Update/PublicInvolvement/default.asp).
- UVTN [Urban Village Transit Network] Monitoring Project. "The goal for the UVTN is service at least every 15 minutes (in both directions), 18 hours a day, seven days a week" (<http://www.seattle.gov/transportation/docs/UVTNMonitoringReport022807.pdf>).
- Neighborhood planning division within Seattle Department of Transportation (SDOT) contains many transportation studies (http://www.seattle.gov/transportation/neighborhood_planning.htm).

II. Seattle Interview Report

Interviewee: Tom Hauger

Title: Comprehensive Plan Manager, Department of Planning and Development

Date: May 4, 2009

a) Citywide evaluation and monitoring

Qualitative measures: State law requires them to evaluate their comprehensive plan every 7 years.

This review focuses on compliance with state law, including consistency with regional plans.

The city's comprehensive plan revision takes 2 years to complete. It involves an extensive public participation process, which asks, among other things, 'are the plan's goals achieving what we want?'

City used to do survey research but it ended a few years ago due to budget constraints.

Quantitative measures: The comprehensive plan is largely about managing growth, so it has targets for housing and job growth. The goal is to track and channel the nature of growth and how sustainable it is. For instance, growth in jobs and wages can determine if people are able to afford to live closer to downtown or if they need to live further from the city. They serve the purpose of indicators.

They monitor households by tracking building permits. They also monitor the economy through the regional council which enables them to track the numbers on an ongoing basis.

Specifically, they closely monitor:

Housing—total numbers, type, and distribution of new and existing housing. (Vacancy is not a significant problem so it is not closely tracked). Housing cost is analyzed more periodically.

Employment—total employment, employment by sector, and by wage level.

In addition they evaluate transit accessibility, even though transit is administered by a regional agency--so they do not have much control over the outcomes.

Other departments have specific parameters that they follow. Parks for example, looks at amount of open space per population per geographic area.

Utilities have service standards, such as water quality and quantity, etc.

b) Neighborhood plan evaluation and monitoring

In addition to the in-depth report, "Monitoring our Progress," analyses of case studies of several urban villages were produced in 2003. These closely examined neighborhoods to see how they had changed after several years, and gathered community feedback.

c) Evaluation and monitoring background in Seattle

After the comprehensive plan was adopted in 1994, the city adopted a monitoring program --it sort of languished after ten years or so. Some of the data was hard to collect, and there was not a strong sense from elected officials that it was actionable or useful to them. At that time, one councilmember began a different monitoring system, but it didn't really get off the ground.

Indicators were very detailed in previous plan, for example water use per capita, use of non-auto transport. For some of them, the data wasn't changing substantially enough in two years to be able to have practical implications.

They never got a lot of feedback from elected officials about the results of indicators reports. Mr. Hauger's sense is that there was not enough dramatic change shown in data to give reason for elected officials to act on the results.

The indicator program was adopted in '95 or '96, and the second report was submitted 4 years later, so priorities had changed—the indicators weren't as important to officials or the times. Not as relevant. If there was dramatic improvement or decline then there would be reason to either celebrate or rally support and resources to address an issue, but without that they weren't as useful.

d) Utilizing outside sources

They have worked with Sustainable Seattle and paid attention to their reports—but their scope does not match up perfectly. Sustainable Seattle analyzes county by county, or the entire area. Their data is not always relevant for the city.

Seattle's planners have looked at other benchmark programs in the country as part of their research into plan monitoring strategies. For example, King County benchmarks related to growth and housing, land use, environment, and transportation—in addition some of the analysis was useful for Seattle too.

They have researched other monitoring programs such as the Boston Indicators Initiative and Jacksonville Community Council, Inc. when developing their programs. It may be easier for a nonprofit to conduct monitoring and benchmarking if that is their sole focus in time and resources.

e) Recommendations derived from interview

- Consider monitoring during the plan-writing process so that the plan is shaped for monitoring.
- When choosing a monitoring strategy, think through which issues to measure that will have longevity so that results will be worthwhile in 10 or 20 years.
- Use results of other organizations, ex. Sustainable Seattle, Vancouver's Vital Signs, etc. to help track progress and indicate areas of improvement
- Community indicator groups, such as Sustainable Seattle, might assist municipalities and have more impact if they monitor/evaluate along municipal jurisdictional lines, so that their data is applicable at the city, county etc. level.
- Have a formal system, but not too detailed or specific to current politics, so that it is doable and relevant. More timely detailed studies can be performed in response to issues that arise.
- It is more important, relevant, and effective to carefully choose a smaller number of indicators to monitor that are chosen carefully to be timeless, than to expend resources on a large number of data analysis triggered by fads

Appendix 2: Land use and transportation integration indicators assay**Chapel Hill Indicators**

Category	Indicator	Interpretation	Page number	Source
Mode share	Percentage of total trips made in single-occupancy vehicles versus other modes	less is better	68	1
	Mode share by corridor segment	mode patterns	85	1
Pedestrian/bicycle network	12 hour pedestrian counts at selected locations	pedestrian patterns	46	1
	12 hour bicycle counts at selected locations	bicycling patterns	61	1
	% change over time of 12 hour pedestrian counts at selected locations	changes in pedestrian patterns	53	1
	% change over time of 12 hour bicycle counts at selected locations	changes in bicycle patterns	s-21	1
	Total miles of sidewalk	more is better	40	1
	Total miles of on-street bicycle facility	more is better		1
	feet of sidewalk built per year	depends on targets set	41	1
	Pedestrian facilities within 1/4 mi. of transit service	more is better	39	1
Pedestrian/bicycle safety	New sidewalk construction within transit service area, total miles and % change over time	depends on targets set	41	1
	Number of accidents, injuries and fatalities by road corridor involving bicyclers and pedestrians	lower is better	72	1
Transit Ridership	total boardings	more=higher service use		1
	total boardings per capita	more=higher service use		1
	Annual ridership	more=higher service use	82	1
Local Transit Service	Transit operating hours	more=higher service	77	1
	Transit operating hours per capita	more=higher service	78	1
	annual service hours	more = higher service	82	1
	average annual passengers per service hour	more=better optimization of capacity	82	1
Roadway Congestion	Level of Service (volume to capacity ratio) at particular intersections or roads	A, B, C= lower efficiency of road capacity use; D=Chapel Hill's standard; E, F= congested	3	1
	Daily Traffic Volume per roadway	traffic patterns	9	1
	change in congestion by roadway segment	changes in congestion patterns	10	1
Vehicular Travel Time	Travel time for travel corridors comparing AM, noon, and PM peak hours	travel time patterns	25	1
	Travel time to work	less is better	7.8	2
Vehicular Speed	Difference between average vehicle speed for AM, PM and Noon hours as compared to speed limit by corridor	positive=speeding, 0=speed limit, negative=slow	29	1
	Change in average vehicle speed over time by corridor	change in traffic speed patterns	32	1
Office Parking	% occupied parking spaces	parking lot optimization patterns	90	1
Land Use	% Mixed-use development	more is better		

Note: The Housing section of the Databook contains a lot of emphasis on affordability of house prices, but lacks language connecting place of work and affordability of nearby housing, or location of housing near transit etc.

Note: Chapel hill does not measure density near transit, housing, or commercial development near transit. The comprehensive plan mentions transit oriented development once, but seems more concerned with neighborhood preservation.

Source 1: LSA Associates, I. (2007). Chapel hill 2005 mobility report card. Chapel Hill, NC: Town of Chapel Hill. Retrieved from <http://www.townofchapelhill.org/index.aspx?NID=1233>

Source 2: Chapel Hill Planning Department. (2007). Town of chapel hill 2007 data book No. 8th edition). Chapel Hill, NC: Town of Chapel Hill.

Carrboro Indicators				
Category	Indicator	Interpretation	Page number	Source
Transit Service	Frequency- number of fixed routes, times they run and how often they run	more better	p.43	1
	Coverage- % of town within 1/4 mile of transit	more better	p.43	1
	Capacity of buses/number	more better	p.43	1
	Transit Operating Hours per Capita	more better	p.46	1
Transit Ridership	daily ridership- number of boardings at each stop	more better	p.47	1
	System ridership, operating hours, riders/hour, riders/capita	more better	p.48	1
	Fixed Route ridership, operating hours, riders/hour, riders/capita	more better	p.48	1
	Demand responsive ridership, operating hours, riders/hour, riders/capita	more better	p.48	1
Accomplishments of Planning Division	downtown mixed-use permits/ residential developments	more better	p.102	2
Performance Measures	number of land use ordinance revisions	depends on targets	p.103	2
	number of conditional use permits	depends on targets	p.103	2
	number of special use permits	depends on targets	p.103	2
	number of zoning permits	depends on targets	p.103	2
	number of new residential units in town	more better	p.103	2
	tax value of new residential units in town	more better	p.103	2
	amount of new commercial square footage in town	more better	p.103	2
	tax value of new commercial square footage in town	more better	p.103	2
	inspections per day/ per inspector	more better	p.103	2
Accomplishments of Transportation	service area	more better	p.108	2
	annual hours of service	more better	p.108	2
	fixed route ridership	more better	p.108	2
Performance Measures	residences within 1/4 mile of transit stop	more better	p.108	2
Source 1: Town of Carrboro. (2008, July 1). Town of carrboro adopted budget: Fiscal year 2008-2009. Carrboro, NC: Town of Carrboro, NC. Retrieved from http://www.ci.carrboro.nc.us/MS/Budget/Adopted/0809/Complete.pdf				
Source 2: LSA Associates, I. (2004). Town of carrboro 2003 mobility report card. Carrboro, NC: Town of Carrboro. Retrieved from http://www.ci.carrboro.nc.us/pzi/PDFs/041122-CarrboroMobilityReportCard2003.pdf				

Seattle			
Category	Indicator	Interpretation	Page number
safety	Percentage of marked crosswalks at uncontrolled locations that are consistent with federal guidelines and city policy	more is better	p. 2
mobility and access through transp. choices	work trips using non SOV modes	more is better	p.2
	all trips using non-SOV modes	more is better	p. 2
	percent of Urban Village Transit Network corridors with transit travels times above 30% of posted arterial speed limit	Compare transit speed to highway speed limit	p. 2
	% of urban bike/ped trails complete		
	Number of actions completed on high priority transportation neighborhood plan recommendations		
	Bike master plan completed	Yes is better	
	Pedestrian master plan completed	Yes is better	
Source: Seattle Department of Transportation. (2005, Oct. 21). Seattle transportation strategic plan: Performance measures. Seattle, WA: Seattle Department of Transportation. Retrieved from http://www.seattle.gov/transportation/tsphome.htm			
Population Growth/Household Target	50,000 to 60,000 total in Seattle	Urban Villages better than sprawl	p.1
Urban Centers	1,300 to 14,700 households over 20 yrs		p.1
Urban Villages	200 to 1,700 households over 20 yrs		p.1
Employment Growth Targets	establishment of urban centers and manufacturing/industrial centers	tie between housing and employment	p.1
Thresholds of Deviation from Targets	50% or more of 20 year target in 5 yrs	fast growing villages/centers	p.2
	household or employment totals increase by 25% or more within 5 yrs	fast growing villages/centers	p.2
	less than 10% of household or employment targets in 5 yrs	slow growing villages/centers	p.2
Neighborhood Studies	character of village/center	mature, pedestrian friendly urban environment better than less defined village	p.3
	recent development patterns	depends on target sets	p.3
	vacancy rates	depends on target sets	p.4
	business activity	depends on target sets	p.4
	crime rates	less is better	p.4
	transit access	more is better	p.4
	physical appearance	nicer is better	p.4
Source: City of Seattle Planning Department. (1998). Monitoring growth targets in urban villages and urban centers. Seattle, WA: City of Seattle. Retrieved from http://www.seattle.gov/dpd/cms/groups/pan/@pan/@plan/@proj/documents/Web_Informational/dpd_001008.pdf			

Portland				
Category	Indicator	Interpretation	Page number	Source
Portland plan assessment	20 minute neighborhood--all essential services found within a 20-minute walk			2
Transit Corridors	increased residential densities within 1/4 mile of existing/planned transit routes	more is better	p.2	1
Living Closer to Work	greater residential densities near employment centers to reduce VMT	more is better	p.3	1
	home-based work options	more is better	p.3	1
Transit Stations and Transit Centers	minimum residential densities within 1/2 mile of transit stations and 1/4 mil of transit centers	more is better	p.3	1
Transit Supportive Density	average minimum densities of 15 units/acre within 1/4 mile of existing and planned transit streets, Main streets, town centers, and transit centers	more is better	p.3	1
	average minimum densities of 25 units/acre within 1/2 mile of light rail stations and regional centers	more is better	p.3	1
	minimum floor area ratios for non-residential development at light rail centers of 0.5:1	more is better	p.3	1
Transportation System	transit connections between residential and work	more is better	p.2	1
Land Use and Transportation Policies	transit-oriented development (increased density along transit streets/stations)	more is better	p.18	1
	bike and pedestrian connections to transit	more is better	p.18	1
	limited drive-through facilities	less is better	p.18	1
Connectivity	connections to transit routes/mixed use centers	more is better	p.19	1
Bicycle Transportation	bikeways connecting to transit stations	more is better	p.20	1
	bicycle parking in transit facilities	more is better	p.20	1
	increase bicycle transit trips	more is better	p.20	1
Public Transportation	increased bus service	more is better	p.20	1
	streetcar lines	more is better	p.21	1
Parking Management	parking spaces	less is better	p.21	1
Travel Management	car-share programs	more is better	p.22	1
	reduced single-occupant vehicles	less is better	p.22	1
Energy Efficiency through Land Use Regulations	commercial service centers and central industrial areas near major arterial and transit lines	more is better	p.4	1
	decreased length of daily trips	less is better	p.4	1
	trip chaining	more is better	p.4	1
	density along transit stations and routes	more is better	p.4	1
Energy Efficient Transportation	carpool riders	more is better	p.6	1
	deductions for employer paid transit	more is better	p.6	1
Project Selection	street connectivity for all modes	more is better	p.4	1
Street Design and Right-of-Way Improvements	bicycle facilities	more is better	p.4	1
	sidewalks	more is better	p.4	1
	improved transit operations	more is better	p.4	1
	narrow residential streets	less is better	p.4	1
Street Plans	full street connections with spacing of no more than 530 feet between connections	more is better	p.5	1
	bike and pedestrian connections at 330 ft. intervals	more is better	p.5	1
Performance Measures	LOS as one measure		p.28	1
Note: Most indicators were adapted from objective statements listed under goals of the comprehensive plan.				
Note: The comprehensive plan was written in the 1980s and currently undergoing a major revision.				
Source 1: City of Portland. (1980-2006). City of portland comprehensive plan goals and policies. Portland, Oregon: City of Portland. Retrieved from http://www.portlandonline.com/bps/index.cfm?c=47556				
Source 2: City of Portland Bureau of Planning. (2008). Comprehensive plan assessment. Portland, OR: City of Portland. Retrieved from http://www.portlandonline.com/portlandplan/index.cfm?c=47107&a=191249				

San Francisco			
Category	Indicator	Interpretation	Page number
Congestion Management- Transportation Performance Measures	Modal Split	more is better	Part 1
	Person Throughput	more is better	Part 1
	Accessibility	more is better	Part 1
	hours of delay	less is better	Part 1
	volume of air pollution emissions	less is better	Part 1
Transportation Demand Management	ratio of vehicles to employees	less is better	Part 1
	bicycle parking and facilities	more is better	Part 1
Vehicle Circulation-factors determining acceptable levels of traffic on specific streets	predominance of land use fronting the street	depends on targets/goals	Part 1
	setback/sidewalk width	depends on targets/goals	Part 1
	buffering-landscape, elevation, etc.	depends on targets/goals	Part 1
	level of pedestrian/bicycle traffic	depends on targets/goals	Part 1
	proportion of street that's residential	depends on targets/goals	Part 1
	residences face the street	depends on targets/goals	Part 1
	presence of hospitals, schools, parks	depends on targets/goals	Part 1
Mass Transit	transit preferential streets/ transit centers	more is better	Part 2
	service standard ratio of passengers to seats	depends on targets/goals	Part 2
	travel downtown to less than 30 minutes from all parts of city- express bus	less is better	Part 2
	bicycle parking and facilities/ pedestrian facilities	more is better	Part 2
Parking	low parking in areas accessible by transit (usually developed prior to periods of high automobile ownership)	depends on targets/goals	Part 2
Introduction: Requirements	vehicle occupancy rates- CalTrans estimates for bridges and highways		p.2
	changes in downtown parking supply- Department of Parking and Traffic 2001 estimates		p.2
	new housing production		p.2
	peak period transit ridership and capacity		p.3
	uses of funds from the Transit Impact Development Fee		p.3
	report on urban form		p.3
Transportation	mode split	more transit users/ fewer SOV better	p.97
	number of parking entitlements	less is better	p.98
	vehicle occupancy during peak hours	more occupants better	p.98
	transit service levels- MUNI	more is better	p.98
	Transit Impact Development Fee Revenue	more is better	p.99
Sources: San Francisco Planning Department. (2000-2009). San Francisco, CA general plan. Retrieved June 23, 2009, from http://www.sfgov.org/site/planning_page.asp?id=41415			
San Francisco Planning Department. (2004). Downtown plan monitoring report. San Francisco, CA: City of San Francisco. Retrieved from http://www.sfgov.org/site/uploadedfiles/planning/Citywide/pdf/Chapter%20One.pdf			
Commerce and Industry Inventory 2008: http://www.sfgov.org/site/uploadedfiles/planning/Citywide/pdf/Commerce_and_Industry_Inventory_2008.pdf			

Metropolitan Atlanta		
Category	Indicator	Interpretation
	Daily VMT per licensed driver/ per person	less is better
	VMT per licensed driver/person per day	less is better
Transit Accessibility	Number of people that live or work within 0.4 mi. of a transit stop year (in thousands)	more is better
	total number of vanpools operating in a given year in the 28-county Atlanta area	more is better
Mobility	Transit passenger miles traveled (in millions)	more is better
air quality	Daily vehicle emissions (% relative to baseline)	VOC, NOX, Primary PM 2.5
congestion	rush hour traffic--metric index	
Source: Georgia Regional Transportation Authority. (2008). 2008 transportation MAP [metropolitan atlanta performance] report. Atlanta, GA: Georgia Regional Transportation Authority. Retrieved from http://www.grta.org/PDF_Files/2008_Transportation_MAP_Report.pdf		

Chicago Metropolitan Area for Planning		
Category	Indicator	Interpretation
Performance Measurements- General	VMT	less is better
	Travel Time Index- average extra travel time required during peak period congestion	less is better
	Planning Time Index- ratio of the total time needed to ensure 95% on-time arrival to free-flow travel time	less is better
	congested hours- number of hours per day a facility is congested	less is better
Source: Chicago Metropolitan Agency for Planning. (2009). Goto 2040 performance measurement. Retrieved June/23, 2009, from http://www.cmap.illinois.gov/cmp/measurement.aspx		

Victoria Transportation Policy Institute

Category	Indicator	Interpretation
Economic	transport user satisfaction ratings	higher is better
	average door to door commute time	lower is better
	number of job opps and commercial services within 30-min travel distance of res.	more is better
	average number of basic services (schools, shops and gov't offices within walking distance of homes	more is better
	per capita motor-vehicle mileage in on and off peak hours	less is better
	variety and quality of transport system options available in a community	more is better
	portion of travel made by non-auto modes	more is better
	per capita congestion delay	less is better
	portion of road and parking costs borne directly by users	more is better
Plan Quality	comprehensiveness of planning process: whether it considers all sign. impacts and uses best current eval. practices	more is better
	mobility management programs	more is better
	pricing--congestion, tax reforms, parking cash-out	more is better
	smart growth practices	more is better
Environment	per capita fossil fuels consumption	less is better
	carbon dioxide emissions per capita	less is better
	frequency of air pollution standard violations	less is better
Litman, T. (2008, Dec. 1). Well measured: Developing indicators for comprehensive and sustainable transport planning. Victoria, Canada: Victoria Transport Policy Institute. Retrieved from http://www.vtpi.org/wellmeas.pdf		

Jacksonville Community Council, Inc.			
Category	Indicator	Interpretation	Page number
System Accessibility	weighted pedestrian environment factor	unknown	p. 14
	% of population and jobs with access to transit	more is better	p. 14
	transit connectivity index	more is better	p. 14
	Pedestrian level of service	more is better	p. 14
	Bicycle level of service	more is better	p.14
Travel choices	average vehicle miles traveled per person	less is better	p. 14
	% of work trips and all trips by mode	more non-SOV is better	p. 14
	average number of vehicles per household	less is better	p. 14
Other	Communities with Safe Routes to School Programs or plans	more is better	p. 15
	good air quality days per year	more is better	p. 15
	% of regional trails plan complete	more is better	p. 15
	percent of rail stations or major bus/bus rapid transit corridors covered by an adopted TOD Station Area Plan with breakout for implementation status	more is better	p. 15
	transit passenger trips per capita	more is better	p. 15
	people reporting commuting times of 25 min or less	more is better	p. 15
	Number and/or % of jobs located near affordable housing	more is better	p. 15
Jacksonville Community Council Inc. (2008). Quality of life progress report. Jacksonville, FL: Jacksonville Community Council, Inc. Retrieved from http://www.jcci.org/Indicators/Statistics.aspx			

Reid Ewing and Don Chen: from Measuring Sprawl and its Impact		
Category	Indicator	Interpretation
Factors of sprawl	residential density	less is more sprawl
	neighborhood mix of homes, jobs, and services	more is less sprawl
	strength of activity centers and downtowns	more is less sprawl
	accessibility of the street network	more is less sprawl
	% of new developments in infill locations	more is less sprawl
Ewing, R. H., Pendall, R., & Chen, D. D. T. (2002). Measuring sprawl and its impact. Washington, D.C.: Smart Growth America. Retrieved from http://www.smartgrowthamerica.org/sprawlindex/MeasuringSprawl.PDF		

European Common Indicators			
Category	Indicator	Interpretation	Page number
climate change gases	CO2 emissions per capita	less is better	p. 168
local mobility and passenger transportation	percentage of trips by motorized private transport	less is better	
Quality of local air	number of PM 10 net overcomings	less is better	
Children's journeys to and from school	percentage of children going to school by car	less is better	
Wong, C. (2006). <i>Indicators for urban and regional planning :The interplay of policy and methods</i> . London and New York: Routledge.			

INDEX		
Category	Indicator	Interpretation
Land Use	land use balance	more is better
	land use mix	more is better
Transit Oriented Development	transit adjacency to housing	more is better
	transit proximity to housing	more is better
	residential infill	more is better
	transit adjacency to employment	more is better
	transit proximity to employment	more is better
	employment infill	more is better
	transit orientation index	more is better
	transit oriented residential density	more is better
	transit oriented employment density	more is better
Vehicle miles traveled	VMT produced and attracted	less is better
Criterion Planners Consulting Firm. (2008, Nov.). INDEX PlanBuilder planning support system 9.3: Indicator dictionary. Portland, OR: Criterion Planners. Retrieved from		